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C;Species: Homo sapiens (man)
C;Date: 29-Jan-1998 #sequence_revision 13-Feb-1998
C;Accession: S58396; S71401; S71402
R;Sherrington_R: Pornari
          A;Molecule type: mRNA
A;Residues: 1-467 <SHE>
A;Cross-references: EMBL:L42110; NID:g904118; PIDN:AAB46416.1;
R;Vidal, R.; Ghiso, J.; Wisniewski, T.; Frangione, B.
FEBS Lett. 393, 19-23, 1996
                                                                                Risherington, R.; Rogaev, E.I.; Linng, Y.; Rogaeva, ero, I.; Pinessi, L.; Neo, L.; Chumanov, I.; Pollen, E.; Rommens, J.M.; St George-Hyslop, P.H. Nature 375, 754-760, 1995
A; Title: Cloning of a gene bearing missense mutations A; Reference number: 158095, MUID:95319802; PMID:75964
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S58396
  A; Title: A
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R; Sahara, N.; Yahagi, Y.; 'FEBS Lett. 381, 7-11, 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      presenilin I-463 - human
C:Species: Homo sapiens (man)
C:Date: 20-Jul-1996 #sequence_revision 13-Mar-1997 #text_change 29-Sep-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 1
S63683
                                                                                                                                                                                             presentlin 1, splice form 467 - human N; Alternate names: Alzheimer's disease protein 3; protein S182
                                                                       A; Accession: S58396
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A; Residues: 1-463 <SAH>
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                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Title: Identification and characterization of presentilin I-467, I-463 and I-374. A; Reference number: S63683; MUID:96193901; PMID:8641442
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Pred. No.
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expression in platelets and megakaryocytes.
                                                                                   PMID:7596406
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hypothetical protein C; Species: Delnococ C; Date: 03-Dec 1999 C; Accession: H78253 R; White, O; Eisen, M.; Van
             S; Smith, H.O.; vanter, J.C
Science 286, 1571-137, 1999
A;Title: Genome sequence of 1
A;Reference number: A75250; 1
                                                                                                                                                                                               RESULT 4
H75253
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Nature 375, 754-760, 1995
A;Title: Cloning of a gene bearing missens
A;Reference number: 158095; MUID:95319502:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 3
178388
S182 protein - mouse
C:Species: Mus musculus (house mouse)
C:Species: Peb-1997 #sequence_revision 27-Feb-1997 #text_change 29-Sep-1999
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C;Superfamily: prese
A; Accession: H75253
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Status: preliminary; translated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R;Sherrington, R.; Rogaev, E.I.; Liang, Y.; Rogaeva, R;Sherrington, R.; Rogaeva, L.; Chumakov, I.; Pollen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C; Accession: I78388
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F;279,405/Binding
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C; Superfamily: presentlin
C; Keywords: alternative splicing; Alzheimer's disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Accession:
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elnococcus radiodurans
ec.1999 #sequence_revision 03-Dec-1999 #text_change 31-Mar-2000
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                                                              ; Heidelberg, J.F.; an, J.J.; Lam, P.; l
J.C.; Fraser, C.M.
               of the radioresistant bacterium 50; MUID:20036896; PMID:10567266
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Pred. No.
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Pred. No. 2.7e-09;
; Mismatches 0;
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s 0;
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<TM8>
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                                                                                    E.K.;
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Utterback,
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                                                                                    J.D.; Dodson,
T.; Zalewski,
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A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-347 <WHI>
A;Cross-references: GB:AE002089; GB:AE000513; NID:g6460427; PIDN:AAF12144.1; PID:g646043
A;Experimental source: strain R1
C;Genetics:
A;Gene: DR2600
A;Map position: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                hypothetical protein CC2359 [imported] - Caulobacter crescentus
C;Specles: Caulobacter crescentus
C;Specles: Caulobacter crescentus
C;Date: 20-Apr-2001 #sequence_revision 20-Apr-2001 #text_change 17-May-2002
C;Accession: F87541
T.V.; Paulsen, I.T.; Nelson, K.E.; Eisen, J.; Heidelber,
R;Nierman, M.C.; Feldblyum, T.V.; Paulsen, I.T.; Nelson, K.E.; Gwinn, M.L.; Haft, D.H.;;
B.; Laub, M.T.; DeBoy, R.T.; Dodson, R.J.; Durkin, A.S.; Gwinn, M.L.; Haft, D.H.;;
n, J.; Ermolaeva, M.; White, O.; Salzberg, S.L.; Shapiro, L.; Venter, J.C.; Fraser,
proc. Natl. Acad. Sci. U.S.A. 98, 4136-4141, 2001
A;Tille: Complete Genome Sequence of Caulobacter crescentus.
A;Reference number: A87249; MUXp:21173698; PMID:11259647
A;Accession: F87541
A;Accession: F87541
                A;Cross references: GB:AL591985; PIDN:CAC48957.1; PID:g15140442; GSPDB:GN00167 A;Experimental source: strain 1021, megaplasmid pSymB R;Galibert, F.; Finan, T.M.; Long, S.R.; Publer, A.; Abola, P.; Ampe, F.; Barlo pela, D.; Chain, Q.; Cowie, A.; Davis, R.W.; Dreano, S.; Federspiel, N.A.; Fisl L.; Hyman, R.W.; Ones, T. Science 293, 668-672, 2001
A:Authors: Kahn, D.; Kahn, M.L.; Kalman, S.; Keating, D.H.; Kiss, E.; Komp, C., hebault, P.; Vandenbol, M.; Vorholter, F.J.; Weidner, S.; Wells, D.H.; Wong, K.; Title: The composite genome of the legume symbiont Sinorhizobium meliloti. A; Reference number: A96039; MUID:21368234; PMID:11474104
                                                                                                                                                                                                                                                                                                                                                      R;Finan, T.M.; Weidner, S.; Wong, K.; Buhrmester, J.; Chain, P.; Vorholter, F.J.; Hernar Proc. Natl. Acad. Sci. U.S.A. 98, 9889-9894, 2001
A;Title: The complete sequence of the 1,683-kb pSymB megaplasmid from the N2-fixing endc A;Reference number: A95842; MUID:21396508; PMID:11481431
A;Accession: E95911
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A;Molecule type: DNA
A;Residues: 1-327 <STO>
A;Cross-references: GB:AE005673; NID:g13423888; PIDN:AAK24330.1;
C:Genetics:
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F87541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      probable transcription regulator, LacI family protein [imported] - Sinorhizobium
C;Speckes: Sinorhizobium meliloti
C;Speckes: Sinorhizobium meliloti
C;Date: 24-Aug-2001 #sequence_revision 24-Aug-2001 #text_change 30-Sep-2001
C;Accession: E95911
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C; Superfamily:
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A; Residues: 1-343 < KUR>
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A; Contents: annotation
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8; Conserva
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o. 1.7;
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o. 0.14;
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                                                                                                                                                                           , F.; Barloy-Hubler N.A.; Fisher, R.F.
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aft, D.H.; Kolon
C.; Fraser, C.M.
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A;Map position: 14
C;Superfamily: presentlin
C;Keywords: transmembrane protein
F;78-96/Domain: transmembrane #status predicted <TML:
F;129-150/Domain: transmembrane #status predicted <TM:
F;160-181/Domain: transmembrane #status predicted <TM:
F;191-209/Domain: transmembrane #status predicted <TM:
F;217-234/Domain: transmembrane #status predicted <TM:
F;217-234/Domain: transmembrane #status predicted <TM:
F;240-257/Domain: transmembrane #status predicted <TM:
F;404-424/Domain: transmembrane #status predicted <TM:
                                                           A; Experimental source: brain C; Comment: This protein is a C; Genetics:
                                                                                                                                                                                                  R;Calenda, A.; Mestre-Frances, N.; Czech, C.; Pradier, L.; Pe
Biochem. Biophys. Res. Commun. 228, 430-439, 1996
A;Title: Molecular cloning, sequencing, and brain expression
A;Reference number: JC5080; MUID:97079199; PMID:8920931
A;Accession: JC5080
                                                                                                                                                                                                                                                                                                          presenilin 1 protein isoform 467 - lesser mouse lemur C;Speciles: Microcebus murinus (lesser mouse lemur) C;Deciles: Microcebus murinus (lesser mouse lemur) C;Date: 31-Jan-1997 #sequence_revision 31-Jan-1997 #text_change 20-Jun-2000 C;Accession: JC5080
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R;Calenda, A.; Meatre-Frances, N.; Czech, C.; Pradier, L.; Petter, A.; Bons, N.; Bell Biochem. Biophys. Res. Commun. 228, 430-439, 1996
A;Title: Molecular cloning, sequencing, and brain expression of the presentlin 1 gene A;Reference number: JC5080; MUID:97079199; PMID:8920931
A;Contents: brain
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C;Species: Mcrocebus murinus (lesser mouse lemur)
C;Date: 31-Jan 1997 #sequence_revision 31-Jan-1997 #text_change 13-Sep-1998
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A; Genome: plasmid
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C;Comment: This protein is an i
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A; Map position:
C; Superfamily: P
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A; Residues: 1-467 < CAL>
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A; Residues: 1-463 <CAL>
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                                        A;Gene:
                                                                                                                       A; Cross-references: EMBL: Z71333; NID: g1707591; PIDN: CAA95930.1; PID: g1707592
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nes 7; Conserv
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Pred. No.
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R/Gessain, A.; Boeri, E.; Yanagihara, R.; Gallo, R.C.; Franchini, G. J. Virol. 67, 1015-1023, 1993
A/Title: Complete nucleotide sequence of a highly divergent human T-cell leukemia
                                                                                                                 A;Status: preliminary; not compared A;Molecule type: nucleic acid A;Residues: 1-87 <GES>
                                                                                                                                                                                                                                                                                                          probable regulatory protein p13 II, alternative splice form - human T-cell lymphotropic C;Species: human T-cell lymphotropic virus type 1, HTLV-1 C;Date: 22-Sep-1993 #sequence_revision 25-Apr-1997 #text_change 23-May-1997 C;Accession: F45714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C;Superfamily: methionine-tRNA ligase
C;Keywords: aminoacyl-tRNA synthetase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 9
S73457
                                                                                                 A; Note: sequence
                                                                                                                                                                         A; Accession: F45714
                                                                                                                                                                                          A; Contents: HTLV-IMEL5
                                                                                                                                                                                                                from other geographical regions.
A; Reference number: A45714; MUID:93124536;
                                                                                                                                                                                                                                                                                                                                                                                         RESULT 10
F45714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: EMBL:AE000015; GB:U00089; A;Note: the nucleotide sequence was submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Title: Complete sequence analysis of the genome of the bacterium Mycoplasma pneumoniae A; Reference number: $73327; MUID:97105885; PMID:8948633
A; Accession: $73457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       methionine-tRNA ligase (EC 6.1.1.10) metS - Mycoplasma pneumoniae (strain A R)Alternate names: hypothetical protein B01_orf512; methiony1-tRNA syntheta C;Species: Mycoplasma pneumoniae
A;Variety: ATCC 29342
C;Date: 26-Feb-1997 #sequence_revision 25-Apr-1997 #text_change 03-Jun-2002
C;Accession: S73457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 F;244-261/DOMain:
F;408-428/Domain:
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F:82-100/Domain: transmembrane #status predicted
F:133-154/Domain: transmembrane #status predicted
F:144-185/Domain: transmembrane #status predicted
F:195-213/Domain: transmembrane #status predicted
F:221-238/Domain: transmembrane #status predicted
F:241-238/Domain: transmembrane #status predicted
F:244-261/Domain: transmembrane #status predicted
F:244-261/Domain: transmembrane #status predicted
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A; Residues: 1-512 <HIM>
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                                                                                             extracted from NCBI backbone (NCBIP:122473)
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                                       DB 2;
5. 7;
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hypothetical C; Species: Ca
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A;Experimental source: strain 1021, megaplasmid pSymA R;Galibert, F.; Finan, T.M.; Long, S.R.; Puhler, A.; Abola, P.; Ampe, F pela, D.; Chain, P.; Cowie, A.; Davis, R.W.; Dreano, S.; Federspiel, N. L.; Hyman, R.W.; JONES, T. Science 293, 668-672, 2001
A;Authors: Kahn, D.; Kahn, M.L.; Kalman, S.; Keating, D.H.; Kiss, E.; Khebault, P.; Vandenbol, M.; Vorholter, F.J.; Weldner, S.; Wells, D.H.; A;Title: The composite genome of the legume symbiont Sinorhizobium meli A;Reference number: A96039; MUID:21368234; PMID:11474104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R;Barnett, M.J.; Fisher, R.F.; Jones, T.; Komp, C.; Abola, A.P.; Barloy-Hubler, F.; B.; Kalman, S.; Keating, D.H.; Palm, C.; Peck, M.C.; Surzycki, R.; Wells, D.H.; Yeh, K. Proc. Natl. Acad. Sci. U.S.A. 98, 9883-9885-2001
A;Title: Nucleotide sequence and predicted functions of the entire Sinorhizobium meli A;Reference number: A95262; MUID:21396509; PMID:11481432
A;Accession: D95289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R.Tsujimoto, A.; Teruuchi, T.; Imamura, J.;

Mol. Biol. Med. 5, 29-42, 1988

A;Title: Nucleotide sequence analysis of a

A;Reference number: A61547; MUID:88232270;

A;Accession: D61547
                                                                                                                                            A; Genome: plasmid
                                                                                                                                                                       A; Gene: SMa0412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Date: 24-Aug-2001 #sequence_revision 24-Aug-2001 #text_change 30-Sep-2001
C;Accession: D95289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 hypothetical protein SMa0412 [imported] - Sinorhizobium meliloti (strain 1021) magapl C; Species: Sinorhizobium meliloti
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                                                                                                                                                                                                                     A; Contents: annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: GB:AE006469; PIDN:AAK64878.1; PID:g14523295;
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A; Residues: 1-87 <TSU>
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3 LGPHRS 8
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                                               Similarity 6; Conserv
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                                               40.0%; Score 6; ilarity 100.0%; Pred. No Conservative 0; Misman
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100.0%; Pred. No.
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. 7;
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S.; Federspiel, N.A.; Fisher, R.
                                               Indels
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109 LGPHRS 114

al protein Y39A1A.18 Caenorhabditis elega

elegans

Caenorhabditis

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R;Gessain, A.; Boeri, E.; Yanagihara, R.; Gallo, R.C.; Franchini, J. Virol. 67, 1015-1023, 1993
A.Title: Complete nucleotide sequence of a highly divergent human from other geographical regions.
A. Reference number: A45714; MUID:93124536; PMID:8419636
A;Contents: HTLV-IMEL5
A;Accession: E45714
A;Status: preliminary; not compared with conceptual translation
A;Molecule type: nucleic acid
A;Residues: 1-240 <GES>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       molybdenum cofactor biosynthesis protein C - Deinococcus radiodurans (strain C;Species: Deinococcus radiodurans C;Species: Deinococcus radiodurans C:Date: 03-Dec-1999 #sequence_revision 03-Dec-1999 #text_change 17-Mar-2000 C;Accession: E75257
C;Accession: C;A
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C;Accessio
R;Wall, M.
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A; Residues: 1-168 < WHI>
A; Cross-references: GB: AE002086;
A; Cross-importal source: strain R1
                                                                                                                                                                                                                                                                                                                                                 probable regulatory function protein p30 II, alternative splice C:Species: human T-cell lymphotropic virus type 1, HTLV-1 C:Date: 22-Sep-1993 #sequence_revision 25-Apr-1997 #text_change
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A;Map position:
C;Superfamily: n
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A;Map position: 3
A;Introns: 37/3; 79/3
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A; Residues: 1-139 <WIL>
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A;Status: preliminary; translated from GB/EMBL/DDBJ
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Best Local
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Zalewski,
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C.; Ma
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A; Molecule type: DNA
A; Residues: 1-257 <KUR>
A; Residues: 1-257 <KUR>
A; Cross references: GB: AL591985; PIDN: CAC49796.1; PID: g15141283; GSPDB: GN00167
A; Experimental source: strain 1021, megaplasmid pSymb
A; Experimental sour
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R;Finan, T.M.; Weidner, S.; Wong, K.; Buhrmester, J.; Chain, P.; Proc. Natl. Acad. Sci. U.S.A. 98, 9889-9994, 2001, A:Title: The complete sequence of the 1,683-kb pSymB megaplasmid A;Reference number: A95842; MUID:21396508; PMID:11481431 A;Accession: D96016
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A;Title: Protein isoforms encoded by the px region of human T-cell leukemia/lymphotrc A;Reference number: A46181; MUID:92409607; PMID:1528897
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A;Note: sequence extracted from NCBI back
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C;Species: Sinorhizobium meliloti
C;Date: 24-Aug-2001 #sequence_revision 24-Aug-2001 #text_change 14-Sep-2001
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                                                                                                                                                                                                                        A;Authors: Kahn, D.; Kahn, M.L.; Kalman, S.; Keating, D.H.; Kiss, E.; Komp, hebault, P.; Vandenbol, M.; Vorholter, F.J.; Weidner, S.; Wells, D.H.; Wong A;Title: The composite genome of the legume symbiont Sinorhizobium meliloti A;Reference number: A96039; MUID:21368234; PMID:11474104
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Query Match

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RESULT 19
T37031
                DNA replication and repair RecF protein XF0003 [imported] - Xylella fastidiosa C;Species: Xylella fastidiosa C;Species: Xylella fastidiosa C;Date: 18-Aug-2000 #sequence_revision 20-Aug-2000 #text_change 17-Nov-2000 C;Accession: A82860 R;anonymous, The Xyvella fastidiosa Consortium of the Organization for Nucleot:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R;Nierman, W.C.; Feldblyum, T.V.; Paulsen, I.T.; Nelson, K.E.; Eisen, J.; Heidelberg, B.; Laub, M.T.; DeBoy, R.T.; Dodson, R.J.; Durkin, A.S.; Gwinn, M.L.; Haft, D.H.; Koln, J.; Ermolaeva, M.; White, O.; Salzberg, S.L.; Shapiro, L.; Venter, J.C.; Fraser, C. Proc. Natl. Acad. Sci. U.S. A. 98, 4136-4141, 2001
A;Title: Complete Genome Sequence of Caulobacter, crescentus.
A;Reference number: A87249; MUID:21173698; PMID:14259647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R;Murphy, L.; Harrls, D.; Thomson, N.R.; Parkhill, J.; submitted to the EMBL Data Library, August 1999
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C; Date: 20-Apr-2001 #sequence_revision
    Nature 406
                                                                                                                     A82860
                                                                                                                                        RESULT 20
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A;Accession: T37031
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A; Molecule type: DNA
A; Residues: 1-262 <STO>
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;Species: Streptomyces coelicolor
;Date: 03-Dec-1999 #sequence_revision 03-Dec-1999 #text
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A;Experimental source: strain 9a5c

A;Experimental source: strain 9a5c

R;Simpson, A.J.G.; Reinach, F.C.; Arruda, P.; Abreu, F.A.; Acencio, M.; Alvarenga, R. Britones, M.R.S.; Bueno, M.R.P.; Camargo, A.A.; Camargo, L.E.A.; Carraro, D.M.; Carrer as-Neto, E.; Dueno, M.R.P.; Camargo, A.A.; Camargo, L.E.A.; Carraro, D.M.; Carrer as-Neto, E.; Docena, C.; El-Dorry, H.; Facincani, A.P.; Ferreira, A.J.S. submitted to GenBank, June 2000

A;Authors: Ferreira, V.C.A.; Ferro, J.A.; Fraga, J.S.; Franca, S.C.; Franco, M.C.; Fr J.D.; Junqueira, M.L.; Kemper, E.L.; Kitajima, J.P.; Krieger, J.E.; Kuramae, E.E.; La chado, M.A.; Madeira, A.M.B.N.; Madeira, H.M.F.; Marino, C.L.; Marques, M.V.; Martins, A.Authors: Martins, E.M.F.; Matsukuma, A.Y.; Menck, C.F.M.; Miracca, E.C.; Miyaki, C., F.G.; Nunes, L.R.; Oliveira, M.A.; de Oliveira, M.C.; de Oliveira, R.C.; Palmieri, Rodrigues, V.; Rosa, A.J. de M.; de Rosa Jr., V.E.; de Sa, R.G.; Santelli, R.V.; Sawa A.; Suthors: da Silva, A.C.R.; da Silva, F.R.; da Silva, A.M.; Silva Jr., W.A.; da Silva, A., Reference number: A59328
Qγ
                                                                                                                                                A;Gene: FlyBase:Dpse/Rh3
A;Cross-references: FlyBase:FBgn0012709
C;Superfamily: vertebrate rhodopsin
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                                                                                                                                                                                                                                                A;Molecule type: DNA
A;Residues: 1-123,'L',125-241,'Q',243-254,'R',256-382 <CAW>
A;Cross-references: EMBL:X65879; NID:g9081; PIDN:CAA46710.1; PID:g9082
                                                                                                                                                                                                                                                                                                                                                submitted to the EMBL Data A; Reference number: S65546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Title: Variable rates of evolution among A; Reference number: S40691; MUID:93012921; A; Accession: S40693
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                                                                                                                                                                                                                            C; Genetics
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A; Residues: 1-382 < CAR>
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A; Residues: 1-364 <SIM>
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PESRAA

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R;Kunst, F.; Ogasawara, N.; Moszer, I.; Albertini, A.M.; Alloni, G.; Azevedo, V.; Berter C.; Bron, S.; Broullet, S.; Bruschi, C.V.; Caldwell, B.; Capuano, V.; Carter, N.M.; Cha A.; Ehrlich, S.D.; Emmerson, P.T.; Entian, K.D.; Errington, J.; Fabret, C.; Ferrari, E. Nature 390, 249-255, 1997

A.Authors: Foulger, D.; Fritz, C.; Fujita, M.; Fujita, Y.; Fuma, S.; Galizzi, A.; Galler Iech, J.; Harwood, C.R.; Henaut, A.; Hilbert, H.; Holsappel, S.; Hosono, S.; Hullo, M.F. Koetter, P.; Koningstein, G.; Krogh, S.; Kumano, M.; Kurita, K.; Lapidus, A.; Lardinois, A.Authors: Lauber, J.; Lazarevic, V.; Lee, S.M.; Levine, A.; Liu, H.; Masuda, S.; Maueel Y. M.; Ogawa, K.; Ogiwara, A.; Oudega, B.; Park, S.H.; Parro, V.; Pohl, T.M.; Portetelle Rleger, M.; Rivolta, C.; Rocha, E.; Roche, B.; Rose, M.; Sadaie, Y.; Sato, T.; Scanlon, A.Authors: Schleich, S.; Schroeter, R.; Scoffone, F.; Sekiguchi, J.; Sekowska, A.; Seron akeuchi, M.; Tamakoshi, A.; Tanaka, T.; Terpstra, P.; Tognoni, A.; Tosato, V.; Uchlyama, T.; Winters, P.; Wipat, A.; Yamamoto, H.; Yamane, K.; Yasumoto, K.; Yata, K.; Yoshida, K.; Aluthors: Yoshikawa, H.F.; Zumstein, E.; Yoshikawa, H.; Danchin, A. A.; Alecession: F69834

A.; Authors: F69834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A:Cross-references: EMBL:AL122102
A:Experimental source: adult test
C:Genetics:
conserved hypothetical protein CC0389 [imported] - Caulobacter crescentus C;Species: CaNcobacter crescentus C;Date: 20-Apr-201 #sequence_revision 20-Apr-2001 #text_change 20-Apr-20:C;Accession: D87207
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A; Accession: T34535
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R;Bloecker, H.; Boecher, M.; Brandt, P.; Mewes, H.W.; Gassenhuber, J.; Wiemann, submitted to the Protein Sequence Database, October 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             hypothetical protein DKFZp434H0717.1 - human (fragment) C;Species: Homo sapiens (man) C;Date: 29-Oct-1999 #sequence_revision 29-Oct-1999 #tex
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A;Residues: 1-401 <KUN>
A;Cross-references: GB:Z99109; GB:AL009126; NID:g2633260;
A;Experimental source: strain 168
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: mRNA
A; Residues: 1-407 <BLO>
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les 6; Conser
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100.0%;
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b; Pred. No. 28;
0; Mismatches
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red. No. 28;
Mismatches
                          20-Apr-2001 #text_change 20-Apr-2003
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A; Molecule type: DNA A; Residues: 1-429 <K

A;Cross-references: GB:AE007317; PIDN:AAL00733.1; PID:g15459628; GSPDB:GN00174

A;Status: preliminary

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R;Hoskins, J.A.; Alborn Jr., W.; Arnold, J.; Blasz e, R.; LeBlanc, D.J.; Lee, L.N.; Lefkowitz, E.J.; y, P.; Sun, P.M.; Winkleb, M.E. J. Bacteriol. 183, 5709-577, 2001 A;Authors: Yang, Y.; Young-Bellido, M.; Zhao, G.; A;Title: Genome of the Bacterium Streptococcus pne A;Reference number: A97872; MUID:21429245; pMID:11 A;Accession: H98112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Science 293, 498 506, 2001

A; Authors: Loftus, B.J.; Yang, F.; Smith, H.O.;

A; Title: Complete Genome Sequence of a virulent

A; Title: Complete Genome Sequence of a virulent
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B.; Laub, M.T.; DeBoy, R.T.; Dodson, R.J.; Durkin, A.S.; Gw
n, J.; Ermolaeva, M.; White, O.; Salzberg, S.L.; Shapiro, L.
Proc. Natl. Acad. Sci. U.S.A. 98, 4136-4141, 2001
A;Title: Complete Genome Sequence of Caulobacter crescentus.
A;Reference number: A87249; MUID:21173698; PMID:11259647
                                                                                                                                                                                              C;Species: Streptococcus pneumoniae
C;Date: 22-Oct-2001 #sequence_revision 22-Oct-2001 #text_change 03-Jun-2002
C;Accession: H98112
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A;Residues: 1-429 <KUR>
A;Cross-references: GB:AE005672; PIDN:AAK76180.1; PID:g14973634; GSPDB:GN00164; TIGR:
A;Experimental source: strain TIGR4
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A; Residues: 1-408 <STO>
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C;Accession: C95248
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; Durkin, A.S.; Gwinn, M.L.; Haft, D.H.; Ko 
S.L.; Shapiro, L.; Venter, J.C.; Fraser, C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PMID:11463916
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                                                   G.; Zook, C.;
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M.R.;
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Strain R6
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pneumoniae.
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drop9 protein - human (fragment)
C:Species: Homo sapiens (man)
C:Date: 06-Jan-1995 #sequence_revision
C:Accession: S31927
R:Kirsch, K.
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S31927
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R:TSujimura, A.; Yasojima, K.; Hashimoto-Gotoh, T.
Biochem. Biophys. Res. Commun. 231, 392-396, 1997
A:Title: Cloning of Xenopus presenilin-alpha and -beta cDNAs A:Reference number: JC5390; MUID:97223465; PMID:9070286
A;Accession: JC5390
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C;Species vol-
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A;Gene: hisS
C;Superfamily: histidine-tRNA ligase; histidine-tRNA ligase homology
C;Keywords: ligase
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A; Residues: 1-433 <TSU>
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                                                                                                                                          Molecule type: mRNA Residues: 1-475 <KIR>
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;Species: Xemppus laevis (African clawed frog)
;Date: 04-Jun_1997  #sequence_revision 18-Jul-1997  #text_change
                                                                                              Query Match
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    139 RSTPES 144
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                                                                              Local
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                                RSTPES 12
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100.0%; PI
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e #status predicted <TM4>
e #status predicted <TM5>
e #status predicted <TM5>
e #status predicted <TM7>
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                                                                                         Score 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 6;
Pred. No.
                                                                            Pred. No.
                                                                                                                                                                                                                       February 1993
                                                               Mismatches
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                                                                              DB 2;
o. 32;
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29;
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R.Fraser, C.M.; Gocayne, J.D.; White, O.; M.; Fuhrmann, J.; Nguyen, D.; Utterback, T. C.A.; Venter, J.C. Science 270, 397-403, 1995
A;Title: The minimal gene complement of My
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Note: Nostoc Sp. Strain PCC 7120 is a synonym of Anabaena sp. strain PCC 7120 C; Date: 14-Dec-2001 #sequence_revision 14-Dec-2001 #text_change 30-Jun-2002 C; Accession: AE1895 R; Kaneko, T; Nakabura, Y; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Watanabe, A.; Irigu Nakazaki, N.; Shimpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Yasuda, M.; Tabatt DNA Res. 8, 205-213, 2001 A; Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing Cyanobacterium A; Reference number: AB180%; MUID:21395285; PMID:11759840 A; Accession: AE1895
                              A;Reference number: A64200; MÜI
A;Accession: I64207
A;Status: preliminary; nucleic
A:Moleculo turno rum
                                                                                                                                                                                                                                          preprotein translocase secA - Mycoplasma genitalium
C;Species: Mycoplasma genitalium
C;Date: 17-Nov-1995 #sequence_revision 17-Nov-1995 #text_change 17-Nov-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
""+"hes 6; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          hypothetical protein all0711 [imported] - Nostoc sp. (strain PCC 7120) C:Species: Nostoc sp.
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AE1895
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R;Vlcek, C.; Paces, V.; Maltsev, N.; Paces, J.; Haselkorn, Proc. Natl. Acad. Sci. U.S.A. 94, 9384-9388, 1997
A;Title: Sequence of a 189-kb segment of the chromosome of A;Reference number: Z14955; MUID:97404404; PMID:9256491
A;Accession: T03510
A; Molecule type: DNA
A; Residues: 1-806 < T
                                                                                                                                                                                                                     C; Accession:
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T03510
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Cross-references: GB:BA000019; PIDN:BAB72668.1; A; Experimental source: strain PCC 7120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: DNA
A; Residues: 1-640 < KUR>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Cross-references:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: DNA
A; Residues: 1-617 < VLC>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Status: preliminary; translated from GB/EMBL/DDBJ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     hypothetical protein - Rhodobacter capsulatus C; Species: Rhodobacter capsulatus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
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<TIGR>
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100.0%;
                                                                                     complement of Mycoplasma genitalium 0; MUID:96026346; PMID:7569993
                                         acid sequence not shown; translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
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Pred. No.
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                                                                                                                                                                           ; Adams, M.D.; Clayton, R.A.; Fleischmann, R T.R.; Saudek, D.M.; Phillips, C.A.; Merrick
                                                                                                                                                                                                                                                                                         genitalium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB
42;
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                                            not shown
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Tabata
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GB:U39687; GB:L43967; NID:g3844663; PIDN:AAC71290.1; ce: strain G-37

PID:g1045748;

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R;Hearne, P.Q.; Knorr, D.A.; Hillman, B.I.; Morris, T.J.

Virology 177, 141-151, 1990

A;Title: The complete genome structure and synthesis of infectious RNA
A;Reference number: A35315; MUID:90281577; PMID:2353450

A;Accession: A35315

A;Accession: A35315

A;Accession: A35315

A;Accession: A35315

A;Accession: A35317

A;Accession: A35317

A;Accession: A35317

A;Accession: A35318

A;Cross-references: EMBL:M31019

A;Cross-references: EMBL:M31019

A;Cross-references: EMBL:M31019

A;Cross-references: EMBL:M31019

C;Keywords: nucleotidyltransferase; RNA-directed RNA polymerase; bar
C;Keywords: nucleotidyltransferase; RNA biosynthesis; RNA replication
F;1-296/Product: 33K protein #status predicted <P33>
F;527-694/Domain: barley yellow dwarf virus RNA-directed RNA polymerase
                                                                                        C:Accession: S05456; JS0268
R:Grieco, F.; Burgyan, J.; Russo, M.
Nucleic Acids Res. 17, 6383, 1989
A:Title: The nucleotide sequence of Cymbidium ringspot valence on the number: JS0268; MUID:89366663; PMID:2771646
A:Accession: S05456
A:Status: preliminary; translation not shown
A:Molecule type: genomic RNA
A:Residues: 1-818 <GRID
                                                                                                                                                                                                                                                         C; Species: Cymbidium ringspot virus C; Date: 31-Mar-1990 #sequence_revision
                                                                                                                                                                                                                                                                                         N; Alternate names: RNA n
N; Contains: 33K protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N;Alternate names: RNA nucleotidyltransferase (RNA-directed); RN;Contains: 33K protein C:Species: tomato bushy stunt virus, TBSV C:Date: 30-Sep-1992 #sequence_revision 30-Sep-1992 #text_change C:Accession: A35315
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A:Genetic code: SGC3
A:Genetic code: SGC3
C:Superfamily: preprotein translocase secA
C:Superfamily: preprotein translocase secA
C:Keywords: ATP; membrane-associated complex; P-loop;
F:102-109/Region: nucleotide-binding motif A (P-loop)
F:209-212/Region: DEAD motif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Cross-references:
A;Experimental sourc
C;Comment: The "nucl
                     A; Molecule type: g
A; Residues: 1-296,
                                                       A; Cross-references:
A; Accession: JS0268
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                   A; Residues:
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Best Local :
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source: strain G-37 source: strain G-37 mucleotide-binding motif B" and "nucleotide de motif and a third
                   genomic RNA
6,298-483,'I'
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                  RNA nucleotidyltransferase
                                                                          EMBL: X15511;
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100.0%;
                     ,485-818
                                                                      NID: 959020;
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Pred. No. 51;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 6;
Pred. No.
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NO.
                                                                                                                                                                                                                                                               01-Dec-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 1;
                                                                                                                                                                                                                                                                                                                Cymbidium ringspot virus se (RNA-directed); RNA re
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 2;
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                                                                        PIDN:CAB38439.1;
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ed RNA polymerase; barley yellow
                                                                                                                                                                                                                                                           #text_change
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A; Cross-references: GB:D13713; EMBL:D00506; NID:g221830
A; Accession: B32402
A; Accession: B32402
A; Accession: B32402
A; Molecule type: protein
A; Molecule type: protein
A; Residues: 250-271;304-330 <ROS2>
C; Superfamily: herpesvirus glycoprotein B
C; Keywords: glycoprotein: transmembrane protein
C; Keywords: glycoprotein B #status predicted <SIG>F; 22-865/Product: glycoprotein B #status predicted <GPE
F; 22-865/Product: glycoprotein B #status predicted <TN1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Reference number: S52717
A; Accession: S52717
A; Accession: S52717
A; Molecule type: genomic RNA
A; Residues: 1-851 <RUB>
A; Residues: 1-851 <RUB>
A; Cross-references: EMBL: X85215; NID: 9755716; PIDN: CAA59478.1;
C; Superfamily: carnation mottle virus RNA-directed RNA polymera
C; Keywords: nucleotidyltransferase; RNA biosynthesis; RNA repli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Note: readthrough of the terminator TAG occurs between codons AAA for 296-Lys and G C;Superfamily: carnation mottle virus RNA-directed RNA polymerase; barley yellow dwar C;Keywords: nucleotidyltransferase; RNA biosynthesis; RNA replication E;1-296/Product: 33K protein #status predicted <TTP>
F;528-695/Domain: barley yellow dwarf virus RNA-directed RNA polymerase homology <BYD
                                                                                                                                                                                                                                                                                                                                                  A;Title: Nucleotide sequence and characterization of the A;Reference number: A32402; MUID:89293086; PMID:2544666 A;Accession: A32402 A;Molecule type: DNA A;Residues: 1-865 <ROS>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C; Species: carnation Italian ringspot v
C; Date: 19-Mar-1997 #sequence_revision
                                                                                       F;709-728/Domain: transmembrane #status predicted <TN1>
F;732-752/Domain: transmembrane #status predicted <TN2>
F;27,184,332,364,406,425,631/Binding site: carbohydrate (Asn)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R;Ross, L.J.N.; Sanderson, M.; Scott, J. Gen. Virol. 70, 1789-1804, 1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      glycoprotein B precursor - Marek's dise
C;Species: Marek's disease virus
C;Date: 31-Dec-1991 #sequence_revision
C;Accession: A32402; B32402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Description: Molecular cloning and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R:Rubino, L.; Burgyan, J.; Russo, M. submitted to the EMBL Data Library, March 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        e names: RNA replicase
carnation Italian ringspot virus
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A;Reference number: Z20876; MUID:96325459; PMID:A;Accession: T30715
                                          RESULT
T30815
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A;Note: see websites genome.wustl.edu/gsc/C_elegans/ and www_sanger.ac.uk/Projects/C_el
A;Note: published errata appeared in Science 283, 35, 1999; Science 283, 2103, 1999; an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R; anonymous,
Science 282,
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C;Date: 05-Nov-1999 #sequence_revision
C;Accession: T30715
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A; Title: Conserved linkage between A; Reference number: Z20882; MUID:
                             Genome Res. 6, 1185-1191
                                                                                                                                                                                                                                                                                                                                                                                                    A; Note: published errata
A; Accession: B88794
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A; Residues: 1-981 <STO>
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Date: 10-May-2001 #sequence_revision
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Linkage between the pufferfish (Fugu rubripes) and Z20882; MUID:97129405; PMID:8973913
                                                                                                                                                                                                                                                                                                                                            GB:chr_IV;
                              B.; Brenner,
11996
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100.0%;
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05-Nov-1999 #text_change 21-Jul-2000
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pMID:8670425
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56;

    Japanese pufferfish

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A; Reference
A; Accession:
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                                                                                                                                                 PFHUGB
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: DNA
A; Residues: 1-1048 <HOW>
                                                                                                                                                             RESULT 40
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Keywords:
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3, 226-232, 19
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6; Conser
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C;Species: Homo sapiens (man)
C;Date: 31-Dec-1992 #sequence_revision 31-Dec-1992 #text_change 11-Jun-1999
C;Date: 31-Dec-1992 #sequence_revision 31-Dec-1992 #text_change 11-Jun-1999
C;Accession: A28206; A31195; A38268; A31925; B31925; C31925
R;Gronwald, R.G.K.; Grant, F.J.; Haldeman, B.A.; Hart, C.E.; O'Hara, P.J.;
Proc. Natl. Acad. Sci. U.S.A. 85, 3435-3439, 1988
Proc. Natl. Acad. Sci. U.S.A. 85, 3435-3439, 1988
R;Gronwald, R.G.K.; Grant, F.J.; Haldeman, BA.;
Proc. Natl. Acad. Sci. U.S.A. 85, 3435-3439, 1988
A;Title: Cloning and expression of a cDNA coding
A;Reference number: A28206; MUID:88217915; PMID:2
                                                                                                                                                                                                                         platelet-derived growth factor receptor beta precursor - N; Contains: protein-tyrosine kinase (EC 2.7.1.112)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  F;856/Binding site: phosphate (Tyr) (covalent) (by
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F;597-964/Domain: protein kinase homology <KIN>
F;607-613/Region: protein kinase ATP-binding motif
F;44,88,102,214,291,306,353,370,444,467,478/Binding site: carbohydrate
F;53-99,148-189,234-290,435-507/Disulfide bonds: #status predicted
F;633/Active site: Lys #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     F;428-509/Domain: immunoglobulin homology <IMM4> F;531-554/Domain: transmembrane #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     F;141-191/Domain: immunoglobulin homology <IMM2>
F;227-292/Domain: immunoglobulin homology <IMM3>
F;428-509/Domain: immunoglobulin homology <IMM4>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               F;32-1098/Product: platelet-derived growth factor rece F;32-530/Domain: extracellular #status predicted <EXT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C;Comment: The extracellular domain is predicted to include five C;Comment: The purified receptor was found be ubiquitinated. C;Superfamily: macrophage colony-stimulating factor 1 receptor; i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Title: Structure of the receptor for platelet-derived A; Reference number: A25742; MUID:87014762; PMID:3020426
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C;Date: 31-Mar-1993 #sequence_revisic
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N;Contains: protein-tyrosine kinase (EC 2.7.1.112)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         F;46-101/Domain: immunoglobulin homology <IMM1>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               40.0%;
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         coding for the human platelet-derived
PMID:2835772
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growth factor receptor; heterodim
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                                                                                                   P.J.; Hagen, F.S
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Cell 55, 655-661, 1988

A;Title: Tandem linkage of human CSF-1 receptor (c-fms) and A;Reference number: A90908; MUID:89028677; PMID:2846185
A;Accession: A31925
A;Status: not compared with conceptual translation A;Molecule type: DNA
A;Residues: 676-727 - KOB>
A;Status: not compared with conceptual translation A;Molecule type: DNA
A;Residues: 901-932 - KOB>
A;Status: not compared with conceptual translation A;Molecule type: DNA
A;Residues: 901-932 - KOB>
A;Accession: C31925
A;Status: not compared with conceptual translation A;Molecule type: DNA
A;Residues: 1047-1106 - KOB>
A;Residues: 1047-1106 - KOB>
A;Residues: 1047-1106 - KOB>
A;Genetics: A;Gene
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A;Title: cDNA cloning and expression of a human platelet-derived grow A;Reference number: A31195; MUID:89096941; PMID:2850496

A;Accession: A31195

A;Molecule type: mRNA
A;Residues: 1-240, D',242-1106 <CLA>
A;Residues: 1-240, D',242-1106 <CLA>
A;Cross-references: GB:M21616; NID:9189729; PIDN:AAA36427.1; PID:9189

R;Partanen, J: Maekelae, T.P.; Alitalo, R.; Lehvaeslaiho, H.; Alital
Proc. Natl. Acad. Sci. U.S.A. 87, 8913-8917, 1990
A;Title: Putative tyrosine kinases expressed in K-562 human leukemia
A;Reference number: A38268; MUID:91062389; PMID:2247464
A;Status: nucleic acid sequence not shown
A;Molecule type: mRNA
A;Residues: 828-884 <PAR>
R;Roberts, W.M.; Look, A.T.; Roussel, M.F.; Sherr, C.J.
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F:47-102/Domain: immunoglobulin homology <IMM1>
F:47-102/Domain: immunoglobulin homology <IMM2>
F:142-192/Domain: immunoglobulin homology <IMM3>
F:228-293/Domain: immunoglobulin homology <IMM3>
F:429-510/Domain: immunoglobulin homology <IMM4>
F:429-510/Domain: immunoglobulin homology <IMM4>
F:532-555/Domain: irransembrane #status predicted <IMM>
F:556-1106/Domain: intracellular #status predicted <IMT>
F:566-1106/Domain: protein kinase homology <KIN>
F:506-614/Region: protein kinase homology <KIN>
F:606-614/Region: protein kinase homology <KIN>
F:606-614/Region: protein kinase homology <IMS
F:45,89,103,215,230,292,307,354,371,468,479/Binding site: carbohydrate (Asn) (covalent)
F:54-100,149-190,235-291,436-508/Disulfide bonds: #status predicted
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A:Map position: 5q31-5q32
C:Superfamily: macrophage colony-stimulating factor 1 receptor; immunoglobulin hom C:Keywords: ATP; autophosphorylation; glycoprotein; growth factor receptor; hetero F:1-32/Domain: signal sequence #status predicted <SIG>F:33-1106/Product: platelet-derived growth factor receptor beta #status predicted
    hypothetical protein At2g34680 [imported] - Arabidopsis thaliana W;Alternate names: hypothetical protein T29F13.11 C:Species: Arabidopsis thaliana (mouse-ear cress) C:Date: 12-Feb-1999 #sequence_revision 12-Feb-1999 #text_change
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A; Residues: 1-1106 <GRO>
A; Residues: 1-1106 <GB.J03278; NID:g189731; PIDN:AAA60049.1; PID:g189732
A; Cross-references: GB.J03278; NID:g189731; PIDN:AAA60049.1; PID:g189732
R; Claesson-Welsh, L.; Eriksson, A.; Moren, A.; Severinsson, L.; Ek, B.; Omeron, Cell. Biol. 8, 3476-3486, 1988
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ll 55, 655-661, 1988
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    #text_change 23-Mar-2001
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or receptor; heterodimer
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A; Experimental source: cultivar Columbia

R.Lin, X.; Kaul, S.; Rounsley, S.D.; Shea, T.P.; Benito, M.I.; Town, C.D.; Fujii, C.Y.
M.; Koo, H.; Moffat, K.S.; Cronin, L.A.; Shen, M.; VanAken, S.E.; Umayam, L.; Tallon,
euss, D.; Nierman, W.V.; White, O.; Eisen, J.A.; Salzberg, S.L.; Fraser, C.M.; Venter
Nature 402, 761-768, 1899

A.Title: Sequence and ahalysis of chromosome 2 of the plant Arabidopsis thaliana.
A; Reference number: A84420; MUID:20083487; PMID:10617197
A.; Accession: F84759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                chromodomain-helicase-DNA-binding protein, CHD-1 - mouse N;Alternate names: KYBP protein C;Species: Mus musculus (house mouse) C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999 C;Accession: A47392; S21568 R;Delmas, V.; Stokes, D.G.; Perry, R.P. R;Delmas, V.; Stokes, D.G.; Perry, R.P. Proc. Natl. Acad. Sci. U.S.A. 90, 2414-2418, 1993 A;Title: A mammalian DNA-binding protein that contains a chromodomain and A;Reference number: A47392; MUID:93211972; PMID:8460153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R:Rounsley, S.D.; Lin, X.; Ketchum, N.A.; Crosby, M.L.; Brandon, R.C.; Sykes, submitted to the EMBL Data Library, May 1998
A;Description: Arabidopsis thaliana chromosome II BAC T29F13 genomic sequence.
A;Reference number: Z14179
                                                                                                                                                                C;Keywords: DNA binding
F;293-336/Domain: chromobox homology <CB1>
F;387-427/Domain: chromobox homology <CB2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Experimental source: S194 plasmacytoma cells A; Note: sequence inconsistent with the nucleotide translation A; Note: sequence extracted from NCBI backbone (NCBIN:128272, A; Note: sequence extracted from NCBIN:128272, A; Note: sequence extracted 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Map position: 2
A; Introns: 271/3; 295/3; 317/3; 341/3; 363/3; 384/3; 406/3;
; 1372/2; 1433/1; 1485/1; 1529/1; 1548/3; 1578/3; 1622/3
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A; Residues: 1-1680 <STO>
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                                                                                                                                                                                                                                                                                             A;Cross-references: EMBL:X66028
C;Superfamily: CHD-1 protein; chromobox homology
                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: mRNA
A; Residues: 772-1711 <DE2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Description: KYBP, a mammalian A;Reference number: S21568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   submitted to the EMBL Data Library, May 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R;Delmas,
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A; Residues: 1-1711 <DEL>
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Local Similarity hes 6; Conserv
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Pred. No.
                                            Score 6; Pred. No.
    Mismatches
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                                                                                Length 1711;
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6 HRSTPE

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C;Species: Homo sapiens (man)
C;Date: 13-Jan-1996 #sequence_revision 01-Mar-1996 #text_change 05-Nov-1999
C;Accession: 558277
C;Accession: 558277
R;Smrzka, O.W.; Stoger, R.; Kurzbauer, R.; Fae, I.; Fischer, G.F.; Barlow, Isubmitted to the EMBL Data Library, January 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R;Su, X.Z.; Heatwole, V.M.; Wertheimer, S.P.; Guinet, F.; Herrfeldt, J.A.; Peterson, D. Cell 82, 89-100, 1995
A;Title: The large diverse gene family var encodes proteins involved in cytoadherence a A;Reference number: Z20487; MUID:95330813; PMID:7606788
A;Accession: T28626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A:Description: Conservation of a methylation imprint and a putative imprinting box at the A:Reference number: S58277 h;Accession: S58277 h;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   variant-specific surface protein 2 - malaria parasite (Plasmodium falciparum)
c;Speciles: Plasmodium falciparum
C;Date: 15-Oct-199 #sequence_revision 15-Oct-1999 #text_change 09-Jun-2000
C;Accession: T28626
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A;Cross-references: EMBL:AF016328; NID:g2454603; PIDN:AAB71681.1; A;Experimental source: cv. Morex
                                         A; Molecule type: mRNA
A; Residues: 1-26 <SKA>
                                                                                                  submitted to the EMBL Data Library, A; Reference number: Z15316
A; Accession: T04371
                                                                                                                                                                                 thaumatin-like protein - barley (fragment)
c;Species: Hordeum vulgare (barley)
C;bate: 23-Apr 1999 #sequence_revision 23-Apr-1999
C;Accession: T0A371
                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C; Keywords: growth factor
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: DNA
A; Residues: 1-18 <SMR>
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                                                                               A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                              R; Skadsen, R.W.;
                                                                                                                                                                                                                                                                   T04371
                                                                                                                                                                                                                                                                                     RESULT 45
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                                                                                                                                                                Herbst, J.M.
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100.0%; Pred. No. 23
Live 0; Mismatches
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hypothetical protein - Chlamydophila C; Species: Chlamydophila pneumoniae,
                                       C72131
                                                          RESULT 48
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R;Moretti, P.; Simmons, P.; Thomas, P.; Haylock, D.; Rathjen, P.; Vadas, M.; D'Andrea Gene 144, 213-219, 1994
A;Title: Identification of homeobox genes expressed in human haemopoietic progenitor A;Reference number: 137554; MUID:94314219; pMID:7518789
A;Accession: I37554
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137554
                                                                                                                                                                                                                                                         R;Shirai, M.; Hirakawa, H.; Kimoto, M.; Tabuchi, M.; Kishi, F.; Ouchi, K.; Nucleic Acids Res. 28, 2311-2314, 2000
A;Title: Comparison of whole genome sequences of chlamydia pneumoniae J138
A;Reference number: A86491; MUID:20330349; PMID:10871362
                                                                                                                                                                                                                                                                                                                                    hypothetical protein CPj0006 [imported] - Chlamydophila pneumoniae (strain J138) C;Species: Chlamydophila pneumoniae, Chlamydia pneumoniae C;Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 02-Mar-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C;Species: Homo sapiens (man)
C;Date: 29-May-1998 #sequence_revision 29-May-1998 #text_change 15-Oct-1999
C;Accession: I37554
                                                                                                                                                            A;Cross-references: GB
A;Experimental source:
                                                                                                                                                                                          A; Molecule type: DNA
A; Residues: 1-51 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C; Keywords: DNA
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A;Molecule type: mRNA
A;Residues: 1-39 <RES>
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                                                                                                                              A; Gene:
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                                                                                                                                                              :BA000008; NID:g8978379; strain J138
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pneumoniae (strain CWL029) Chlamydia pneumoniae

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R;Asoh, S; Matsuzawa, H; Ishino, F; Strominger, J.L.; Matsuhashi, M.; Ohta, T. Eur. J. Biochem. 160, 231-238, 1986
A; Mittle: Nucleotide sequence of the pbpA gene and characteristics of the deduced alexacteristics of 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nature 399, 323-329, 1999
A;Title: Evidence for lateral gene transfer between Archaea and Bacteria from genome sec A;Title: Evidence for lateral gene transfer between Archaea and Bacteria from genome sec A;Reference number: A72200; MUID:99287316; PMID:10360571
A;Accession: G72355
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-56 <ARN>
A;Residues: 1-56 <ARN>
A;Cross-references: GB:AE001735; GB:AE000512; NID:94981122; PIDN:AAD35696.1; PID:9498113
A;Experimental source: Strain MSB8
C;GenetLtcs:
A;Gene: TM0611
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672355
672355
hypothetical protein - Thermotoga maritima (strain MSB8)
C;Species: Thermotoga maritima
C;Species: Thermotoga maritima
C;Date: 11-Jun-1999 #sequence_revision 11-Jun-1999 #text_change 21-Jul-2000
C;Accession: G72355
C;Accession: G72355
R;Nelson, K.E.; Clayton, R.A.; Gill, S.R.; Gwinn, M.L.; Dodson, R.J.; Haft, D.H.; Hickey
Garrett, M.M.; Stewart, A.M.; Cotton, M.D.; Pratt, M.S.; Phillips, C.A.; Richardson, D.;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ybeB protein - Escherichia coli (strain K-12)
C;Species: Escherichia coli
C;Date: 30-Jun-1988 #sequence_revision 30-Jun-1988 #text_change 01-Mar-2002
C;Accession: A24995; C64798
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A;Experimental source: strain CWL029
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A;Molecule type: DNA
A;Residues: 1-51 <ARN>
A; Title: The A; Reference
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The complete genome sequence of Escherichia coli K-12 nce number: A64720; MUID:97426617; PMID:9278503
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A;Cross-references: GB:AE000168; GB:U000096; NID:g1786849; A;Experimental source: strain K-12, substrain MG1655 C;Genetics:
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Search completed: February Job time: 19.9025 secs
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A; Residues: 1-69 <BLAT>
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A; Status: nucleic a
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sequence	
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us-08-967-101-2
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US-08-967-101-2
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Patent No.
                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-LOSS
SOFTWARE: PATENTIA Release #1.0, VG
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/967,101
FILING DATE: 10-NOV-1997
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
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APPLICANT: ST. GEORGE-HYSLOP, PETER
APPLICANT: ROMMENS, JOHANNA M
APPLICANT: FRASER, PAUL E
TITLE OF INVENTION: GENETIC SEQUENCE
TITLE OF INVENTION: TO ALZHEIMER'S E
                                                                                                                                                               TELEPHONE: (617) 248-7000
TELEFAX: (617) 248-7100
INFORMATION FOR SEQ ID NO: 2:
                                                                                                               SEQUENCE CHARACTERISTICS:
LENGTH: 467 amino acids
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NAME: Pitcher, Edmund R.
TELECOMMUNICATION INFORMATION:
                            TOPOLOGY: 1 MOLECULE TYPE:
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ADDRESSEE: TESTA, HU
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CITY: Bo
STATE: M
COUNTRY:
ZIP: 021
                                                                       TYPE: amino a STRANDEDNESS:
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US-08-969-853-1
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US-09-263-933-1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MELICANT: ST. GEORGE-HYSLOP, PETER
CALICANT: ROMMENS, JOHANNA M
TITLE OF INVENTION: GENETIC SEQUENCE
TITLE OF INVENTION: TO ALZHEIMER'S I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; Sequence 2, Application; Patent No. 5986054; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-592-541-2
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                                        TELEPHONE: (617) 248-7000
TELEFAX: (617) 248-7100
INFORMATION FOR SEQ ID NO: 2:
                                                                                   NAME: Pitcher, Edmund R. TELECOMMUNICATION INFORMATION TELEPHONE: (617) 248-7000
                                                                                                                                                                                                                                                  COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                      ZIP: 02110
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                     SEQUENCE CHARACTERISTICS
                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES: 1
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                                                                                                                                                                                  CLASSIFICATION:
                                                                                                                                                                                                        APPLICATION NUMBER: US/08/592,541 FILING DATE:
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LENGTH:
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CITY: Boston
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467
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GENETIC SEQUENCES AND PROTEINS RELATED TO ALZHEIMER'S DISEASE

125 High Street THIBEAULT

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Query Match
Best Local Similarity
Matches 467; Conserv
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                                                                                          VQELSSSILAGEDPEERGVKLGLGDFIFYSVLVGKASATASGDWNTTIACFVAILIGLCL
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GENERAL INFORMATION:
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                  FILING DATE:
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 0
FILING DATE:
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TOPOLOGY: linear
MOLECULE TYPE: prote
)8-592-541-2
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APPLICANT: ROMMENS, JOHANNA
APPLICANT: FRASER, PAUL B
TITLE OF INVENTION: GENETIC
TITLE OF INVENTION: TO ALZHE
                                                                                                  COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                     COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
ADDRESSEE: TESTA, HURWITZ & THIBEAULT
STREET: High Street Tower - 125 High Street
                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES:
                                                                                                                                                                                 STREET: High (CITY: Boston STATE: Massacl COUNTRY: U.S./
       ATTORNEY/AGENT INFORMATION
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TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 248-7000
TELEPAX: (617) 248-7100
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 467 amino acids
                                                                                                                                                                                                                                                                 Patent No. 6194153
                                                                                                                                                                                                                                                                              Sequence
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Best Local
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
                                                                                                                        NUMBER OF SEQUENCES: 183
CORRESPONDENCE ADDRESS:
ADDRESSEE: TESTA, HURWITZ &
STREET: High Street Tower -
                                                                                                                                                                             APPLICANT: ROMMENS, JOHANNA M
APPLICANT: FRASER, PAUL E
TITLE OF INVENTION: GENETIC SEQUENCES AND PROTEINS RELATED
TITLE OF INVENTION: TO ALZHEIMER'S DISEASE
                                                                                                                                                                                                         APPLICANT: ST. GEORGE-HYSLOP, PETER APPLICANT: ROMMENS, JOHANNA M APPLICANT: FRASER, PAUL E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY: linear MOLECULE TYPE: protein
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STRANDEDNESS: sir
                                                                                   COUNTRY:
                                                                                                STATE:
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467; Conserv
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                                                                                 Massachusetts: U.S.A.
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Pred. No. 0;
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125 High Street
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TLLLAIFKKALPALPISITEGLVEYFATDYLVQPEMDQLAEHQEYI 467
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                                                      VQELSSSILAGEDPEERGVKLGLGDFIFYSVLVGKASATASGDWNTTIACFVAILIGLCL 420
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Version

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US-08-496-841C-2
; Sequence 2, Application US/08496841C; Patent No. 6210919
; GENERAL INFORMATION:
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TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 248-7000
TELEPAX: (617) 248-7100
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
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Best Local Similarity 100.0%;
Matches 467; Conservative 0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181 YLGEVFKTYNVAVDYITVALLIWNLGVVGMISIHWKGPLRLQQAYLIMISALMALVFIKY
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STRANDEDNESS: sir
TOPOLOGY: linear
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                               CORRESPONDENCE ADDRESS:
ADDRESSEE: Darby & Darby,
                                                               NUMBER OF SEQUENCES:
                                                                                             TITLE OF INVENTION:
                                                                                                                                      APPLICANT: ST. GEORGE-HYSLOP,
                                                                                                                                                                                                                                                            TLLLLAIFKKALPALPISITEGLVEYEATDYLVOPEMDQLAFHQEYI 467
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 STREET: 80
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FRASER, PAUL
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R: US/09/127,480
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TO ALZHEIMER'S DISEASE
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            Sequence 2, Application US/091245
Patent No. 6395960
GENERAL INFORMATION:
APPLICANT: ST. GEORGE-HYSLOP,
APPLICANT: ROMMENS, JOHANNA M
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Best Local S
Matches 467
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Ve
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/496,841C
FILING DATE: 28-Jun-1995
CLASSIFICATION: <Unknown>
                                                                                                                                                  TLLLLAIFKKALPALPISITEGLVEYFATDYLVQPFMDQLAFHQFYI 467
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NAME: Paul F. Fehlner, Ph.D.
REGISTRATION NUMBER: 35,135
TELECOMMUNICATION INFORMATION:
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MEDIUM TYPE: Floppy disk
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467; Conserv
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TELEFAX: (212) 753-6237
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              JOHANNA M
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LENGTH: 467 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION DATA:
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MEDIUM TYPE: Floppy disk
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APPLICATION NUMBER:
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STREET: High:
CITY: Boston
STATE: Massac
COUNTRY: U.S.
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CLASSIFICATION:
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                                                       VQELSSSILAGEDPEERGVKLGLGDFIFYSVLVGKASATASGDWNTTIACFVAILIGLCL 420
TLLLLAIFKKALPALPISITFGLVFYFATDYLVQPFMDQLAFHQFYI 467
                                            VQELSSSILAGEDPEERGVKLGLGDFIFYSVLVGKASATASGDWNTTIACFVAILIGLCL
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Pred. No. 0;
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FILING DATE: 26-JAN-10.
ATTORNEY/AGENT INFORMATION:
NAME: PALISI, THOMAS M
REGISTRATION NUMBER: 36,629
REFERENCE/DOCKET NUMBER: SCHEF
TELECOMMUNICATION INFORMATION:
TOTELECOMMUNICATION 1054-5000
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Matches
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APPLICANT: ROMMENS,
APPLICANT: FRASER, E
TITLE OF INVENTION:
TITLE OF INVENTION:
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ETILING DATE: 03-JUL-1997
ETLING DATE: 530
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/592,541
FILING DATE: 26-JAN-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY: linear MOLECULE TYPE: protein
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compati
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ADDRESSEE: LERNER, DAVID, LITTENBERG,
STREET: 600 SOUTH AVENUE WEST
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CITY: W
STATE:
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SOFTWARE: ASCII
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                                                         MLVETAQERNETLFPALIYSSTMVWLVNMAEGDPEAQRRVSKNSKYNAESTERESQDTVA
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03-JUL-1997
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; TOPOLOGY: Linear
; MOLECULE TYPE: protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
NAME: Pitcher, Edmund R.
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 248-7000
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APPLICATION NUMBER: US,
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APPLICANT: ROMMENS, JOHANNA M
APPLICANT: FRASER, PAUL E
                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
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PRIOR APPLICATION DATA:
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TITLE OF INVENTION:
NUMBER OF SEQUENCES:
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OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATE: Patentin Release #1.0, Version #1.30
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           YLGEVFKTYNVAVDYITVALLIWNFGVVGMISIHWKGPLRLQQAYLIMISALMALVFIKY
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High Street Tower - 125 High Street
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Pred. No. 0;
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; TOPOLOGY: line
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Patent No. 590000
PMERAL INFORMATION:
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Best Local
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08\S92,541
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION:
NAME: Pitcher, Edmund R.
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 248-7000
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APPLICANT: ROMMENS, JOHANI
APPLICANT: FRASER, PAUL E
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STREET:
CITY: F
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ZIP: 02110
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TYPE: amino acid
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High Street Tower - 125 High
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Pred. No. 0;
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RESULT 10
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GENERAL IN
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APPLICANT: Livi, George
APPLICANT: Karran, Eric
APPLICANT: Clinkenbeard, Helen
APPLICANT: Southan, Christopher
APPLICANT: Southan, Christopher
TITLE OF INVENTION: HUMAN SERINE PROTEASE
NUMBER OF SEQUENCES: 40
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                               STREET: 709 Swedeland Road
CITY: King of Prussia
STATE: PA
COUNTRY: USA
ZIP: 19406
ZIP: 19406
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM COmpatible
OPERATING SYSTEM: DOS
SOTTWARE: FastSEQ Version 1.5
CURRENT APPLICATION DATA:
                                                                                                          INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS: LENGTH: 467 amino acid
                                                                                                                                                                                                                                                                                CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION UNMBER: 66/025
FILING DATE: 06-SEPT 1996
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                       NAME: Baumeister, Kirk REGISTRATION NUMBER: 33.833 REFERENCE/DOCKET NUMBER: PS TELECOMMUNICATION INFORMATION: TELEPHONE: 610-270-5096
ANTI-SENSE: NO FRAGMENT TYPE: ORIGINAL SOURCE:
                                              MOLECULE TYPE:
HYPOTHETICAL:
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                                                                            TOPOLOGY:
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TELEFAX: 610-270-5090
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                                                                                           TYPE: amino acid
STRANDEDNESS: sir
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US-08-670-964-2
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Matches
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Patent No. 6010874
GENERAL INFORMATION:
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                                            COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FASTSEQ for Windows Version
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/670,964
FILING DATE: 26-JUN-1996
CLASSIFICATION: 435
          PRIOR APPLICATION DATA:
APPLICATION NUMBER: 60/00
FILING DATE: 13-UL-1995
                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                     APPLICANT: Hardy, John A.
TITLE OF INVENTION: EARLY ONS
TITLE OF INVENTION: GENE AND
NUMBER OF SEQUENCES: 4
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APPLICATION NUMBER:
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ZIP: 19406
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GENE AND GENE PRODUCTS
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Pred. No. 0;
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FILING DATE: 18-JUL-995 ATTORNEY/AGENT INFORMATION: NAME: Han, William T REGISTRATION NUMBER: 34,

60/001,501

REFERENCE/DOCKET NUMBER:

P50358

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US-08-888-077A-2
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APPLICANT: ST. GE
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                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                             NUMBER OF SEQUENCES: 4
CORRESPONDENCE ADDRESS:
                                                                                                                                                    TITLE OF INVENTION:
                                                                                                                                                                           APPLICANT:
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LENGTH: 467 amino acids
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                                                                                          STREET: 600 SOU'CITY: WESTFIELD
OPERATING SYSTEM:
SOFTWARE: ASCII
                       COMPUTER:
                                                                    COUNTRY:
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                                                                                                                   ADDRESSEE:
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                                                                    USA
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FRASER, PAUL E
        IBM PC compatible SYSTEM: PC-DOS/MS-DOS
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Pred. No. 0;
                                                                                                                  LITTENBERG,
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RESULT 13
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Best Local Similarity
                         APPLICANT: ST. GEORGE-HYSLOP, P
APPLICANT: ROMMENS, JOHANNA M
APPLICANT: FRASER, PAUL E
TITLE OF INVENTION: GENETIC SEQ
TITLE OF INVENTION: TO ALZHEIME
NUMBER OF SEQUENCES: 183
CORRESPONDENCE ADDRESS:
ADDRESCET. TECHNICAL ADDRESS:
                                                                                                                                          GENERAL INFORMATION:
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PRIOR APPLICATION DATA:
APPLICATION UMBER: US 08/902,541
FILING DATE: 26-JAN-1996
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION DATE: 03-JUI
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E: TESTA, HURWITZ & High Street Tower -
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                                                          GENETIC SEQUENCES AND PROTEINS
TO ALZHEIMER'S DISEASE
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99.8%;
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COUNTRY:

U.S.A.

Massachusetts

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RESULT 14
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NAME: Pitcher, Edmund R.

TELECOMMUNICATION INFORMATION:

TELEPHONE: (617) 248-7000

TELEFAX: (617) 248-7100

INFORMATION FOR SEQ ID NO: 134:
         Sequence 134, Application Patent No. 6194153
GENERAL INFORMATION:
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Best Local Similarity
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LENGTH: 467 amino acid.
TYPE: amino acid
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PRIOR APPLICATION NUMBER: 08/5\2,541
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version
CURRENT APPLICATION DATA:
 APPLICANT:
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STRANDEDNESS: sir
TOPOLOGY: linear
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ST. GEORGE-HYSLOP, PETER
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Pred. No. 0;
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NAME: Pitcher, Edmund R.
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 248-7000
TELEPAX: (617) 248-7100
INFORMATION FOR SEQ ID.NO: 134:
SEQUENCE CHARACTERISTICS:
LENGTH: 467 amino acids
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Matches
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PRIOR APPLICATION DATA:
APPLICATION NUMBER:
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SOFTWARE: PatentIn Release #1.0,
CURRENT APPLICATION DATA:
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MEDIUM TYPE: Floppy disk
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TYPE: amino acid
STRANDEDNESS: sir
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STATE: Massachusetts
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TLLLLAIFKKALPALPISITFGLVFYFATDYLVQPFMDQLAFHQFYI
           TLLLLAIFKKALPALPISITFGLVFYFATDYLVQPFMDQLAFHQFYI 467
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High Street Tower - 125 High Street
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SYSTEM: PC-DOS/MS-DOS
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Best Local S
Matches 466
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GENERAL INFORMATION:
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SEQUENCE CHARACTERISTICS:
LENGTH: 467 amino acids
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                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: US/08/496,841C
FILING DATE: 28-JUN-1995
CLASSIFICATION: <UNKNOWN>
ATTORNEY/AGENT INFORMATION:
NAME: Paul F. Febliner, Ph.D.
REGISTRATION NUMBER: 35,135
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
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MEDIUM TYPE: Floppy disk
                                      MTELPAPLSYFQNAQMSEDNHLSNTVRSQNDNRERQEHNDRRSLGHPEPLSNGRPQGNSR 60
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         GDPEAQRRVSKNSKYNAESTERESQDTVAENDDGGFSEEWEAQRDSHLGPHRSTPESRAA
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                                                                                                                                                                GDPEAQRRVSKNSKYNAESTERESQDTVAENDDGGFSEEWEAQRDSHLGPHRSTPESRAA
                                                                                YLGEVFKTYNVAVDYITVALLIWNFGVVGMISIHWKGPLRLQQAYLIMISALMALVFIKY
                                                                                                                                                                                                                                                                                                                               TYPE: amino acid
STRANDEDNESS: single
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                                                                                                                                                                                                                                                                                                                                                                                    TELEPHONE: (212) 527-7700
TELEFAX: (212) 753-6237
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OF INVENTION: GENETIC SEQUENCES AND PROTEINS RELATED TO ALZHEIMER'S DISEASE
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FRASER, PAUL E
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US-09-227-725A-1
; Sequence 1, Application
; Patent no. 6383758
; GENERAL INFORMATION:
; APPLICANT: St. George-

US/09227725A

St. George-Hyslop, Peter

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US-08-832-867-3
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CURRENT FILE REPERENCE: 674503-2004
CURRENT APPLICATION NUMBER OF CURRENT APPLICATION NUMBER OF SEC ID NOS: 8
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APPLICANT: Rommens, Johanna
APPLICANT: Fraser, Paul E.
TITLE OF INVENTION: Alzheimer's Related Prot
TITLE OF INVENTION: of Use
FILE REFERENCE: 1034/1810-US1
CURRENT APPLICATION NUMBER: US/09/227,725A
CURRENT FILING DATE: 19991-08
NUMBER OF SEQ ID NOS: 4
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 1
LENGTH: 467
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US-09-227-725A-1
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Best Local Sim
Matches 466;
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Patent No. 6395960
GENERAL INFORMATION:
APPLICANT: ST. GEORGE-HYSLOP, PETI
APPLICANT: ROMMENS, JOHANNA M
APPLICANT: FRASER, PAUL E
TITLE OF INVENTION: GENETIC SEQUENTION:
                                                                                                               TITLE OF INVENTION: GENETIC SEQUENCES AND PROTEINS TITLE OF INVENTION: TO ALZHEIMER'S DISEASE NUMBER OF SEQUENCES: 183
CORRESPONDENCE ADDRESS:
ADDRESSEE: TECT.
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                          STREET: High Str
CITY: Boston
STATE: Massachus
COUNTRY: U.S.A.
ZIP: 02110
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RESULT 19
US-09-375-318-3
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NAME: Pitcher, Edmund R.
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 248-7000
TELEPAX: (617) 248-7100
INFORMATION FOR SEQ ID NO: 134:
SEQUENCE CHARACTERISTICS:
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Best Local :
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Schellenberg, Gerard
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DGY: linear
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                   Levy-Lahad, Ephrat
Bird, Thomas D.
Galas, David J.
                                                       Wasco, Wilma
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         CHROMOSOME 1 GENE AND
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RESULT 20
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Matches 466;
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RECISTRATION NUMBER: 33,287
REFERENCE/DOCKET NUMBER: 920
TELECOMMUNICATION IMFORMATION:
TELEPHONE: (206) 622-4900
TELEFAX: (206) 682-6031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, V
CURRENT APPLICATION DOTA:
APPLICATION NUMBER: US/09/375,318
FILING DATE: 16-Aug1999
CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES: 88
CORRESPONDENCE ADDRESS:
ADDRESSEE: SEED an
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                                                                                     TLLLLAIFKKALPALPISITEGLVFYFATDYLVQPFMDQLAFHQFYI 467
                                                                                                                                                   VQELSSSILAGEDPEERGVKLGLGDFIFYSVLVGKASATASGDWNTTIACFVAILIGLCL 420
                                                                                                                                                                                                                                                        GDPEAQRRVSKNSKYNAESTERESQDTVAENDDGGFSEEWEAQRDSHLGPHRSTPESRAA
                                                                                                                                                                                                            GDPEAQRRVSKNSKYNAESTERESQDTVAENDDGGFSEEWEAQRDSHLGPHRSTPESRAA
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                                                                                                                                                                                                                                                                                                                                                                                                DTETVGQRALHSILNAAIMISVIVVMTILLVVLYKYRCYKVIHAWLIISSLLLLFEFSFI 180
                                                                       TLLLLAIFKKALPALPISITFGLVFYFATDYLVQPFMDQLAFHQFYI
                                                                                                                                   VQELSSSILAGEDPEERGVKLGLGDFIFYSVLVGKASATASGDWNTTIACFVAILIGLCL
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CITY: Seattle
STATE: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: amino acids
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701 Fifth Ave, Suite 6300
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99.8%;
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Pred. No. 0;
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GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatibl
OPERATING SYSTEM: DOS
SOFTWARE: FestSEQ for W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REGISTRATION NUMBER: 34,344
REFERENCE/DOCKET NUMBER: P5
TELECOMMUNICATION INFORMATION:
TELEPHONE: 610-270-5219
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TITLE OF INVENTION:
TITLE OF INVENTION:
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FILING DATE: 10,701-1995
APPLICATION NUMBER: 60/001,501
FILING DATE: 18-JUL-1995
ATTORNEY/AGENT INFORMATION:
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ADDRESSEE: SmithKline
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TOPOLOGY: lir
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STATE: PA
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                                                                                                                                                                                                                                                                  LVVLYKYRCYKVIHAWLIISSLLLLFFFSFIYLGEVFKTYNVAVDYITVALLIWNLGVVG 209
SVLVGKASATASGDWNTTIACFVAILIGLCLTLLLLAIFKKALPALPISITFGLVFYFAT
                                                     ENDDGGFSEEWEAQRDSHLGPHRSTPESRAAVQELSSSILAGEDPEERGVKLGLGDFIFY 389
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                                                                                                      MLVETAQERNETLFPALIYSSTMVWLVNMAEGDPEAQRRVSKNSKYNAESTERESQDTVA
                                                                                                                         MIVETAQERNETLFPALIYSSTMVWLVNMAEGDPEAQRRVSKNSKYNAESTERESQDTVA 329
                                                                                                                                                                            MISIHWKGPLRLQQAYLIMISALMALVFIKYLPEWTAWLILAVISVYDLVAVLCPKGPLR
                                  ENDDGGFSEEWEAQRDSHLGPHRSTPESRAAVQELSSSILAGEDPEERGVKLGLGDFIFY
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FastSEQ for Windows Version
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N: 435
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GENE AND GENE PRODUCTS
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Pred. No. 5.8e-313;
0; Mismatches 1;
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                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION: 435
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
PRIOR APPLICATION NUMBER US 60/002,448
16-AUG-1995
                                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS:
LENGTH: 407 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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AMILTON, BROOK, SMITH & REYNOLDS, P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Huntington Potter and Jinhue Li
TITLE OF INVENTION: ASSAY FOR IDENTIFYING GENES CAUSING
TITLE OF INVENTION: CHROMOSOME NON-DISJUNCTION
                                                                                                                                                                                                                                                                                             MOLECULE TYPE:
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version
                                                                                                                                                                                61 QVVEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTPFTE 120
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REGISTRATION NUMBER: 32,227
REFERENCE/DOCKET NUMBER: HU
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                                                                                 GDPEAQRRVSKNSKYNAESTERESQDTVAENDDGGFSEEWEAQRDSHLGPHRSTPESRAA
                                                  LPEWTAWLILAVISVYDLVAVLCPKGPLRMLVETAQERNETLFPALIYSSTMVWLVNMAE
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Pred. No. 1.8e-283;
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US-08-706-344C-2
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM PC compat.
OPERATING SYSTEM: PC-DOS
SOFTWARE: Patentin Relea
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/
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ATTORNEY/AGENT INFORMATION:
NAME: KIM, JUDITU!
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TELECOMMUNICATION INFORMATION:
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MEDIUM TYPE: Floppy disk
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ADDRESSEE: STERNE, KESSLER, GOLDSTEIN &
STREET: 1100 NEW YORK AVENUE, SUITE 600
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APPLICANT: WASCO, WILMA
TITLE OF INVENTION: Genetic Alterations
TITLE OF INVENTION: Alzheimer's Disease
                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS
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YLGEVFKTYNVAVDYITVALLIWNLGVVGMISIHWKGPLRLQQAYLIMISALMALVFIKY
                                                                 DTETVGQRALHSILNAAIMISVIVVMTILLVVLYKYRCYKVIHAWLIISSLLLLFFFSFI
                                                                                                                                QVVEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTPFTE 120
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                                                DTETVGQRALHSILNAAIMISVIVVMTILLVVLYKYRCYKVIHAWLIISSLLLLFFFSFI
                                                                                                                QVVEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTPFTE
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Pred. No. 2.5e-244;
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US-08-706-344C-4
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
LENGTH: 467 amino acids
TYPE: amino acid
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MEDIUM TYPE: Floppy disk
                                                                                                                                                                     MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: 60/01
FILING DATE: 31-AUG-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: Genetic Alterations Related TITLE OF INVENTION: Alzheimer's Disease NUMBER OF SEQUENCES: 32
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                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION DATA:
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CORRESPONDENCE ADDRESS:
                                                                                        Local 204;
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                                                                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                             REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                             NAME:
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                                         MTELPAPLSYFQNAQMSEDNHLSNTVRSQNDNRERQEHNDRRSLGHPEPLSNGRPQGNSR 60
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                 QVVEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTPFTE
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  YLGEVFKTYNVAVDYITVALLIWNFGVVGMISIHWKGPLRLQQAYLIMISALMALVFIKY
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                                                                                                               Similarity
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                                                                                             43.7%; Score 204; DB 4; L
100.0%; Pred. No. 3.4e-186;
tive 0; Mismatches 0;
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US-08-706-344C-28
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TELEPHONE: 202-371-2600
TELEPHONE: 202-371-2540
TELEFAX: 202-371-2540
INFORMATION FOR SEQ ID NO: 28:
SEQUENCE CHARACTERISTICS:
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ATTORNEY/AGENT INFORMATION:
NAME: KIM, JUDITH U.
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APPLICATION NUMBER: 60/003,054
FILING DATE: 31-AUG-1995
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APPLICANT: WASCO, WILMA
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                                                                                                                                                                                                                                                                                         Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REGISTRATION NUMBER: 40 REFERENCE/DOCKET NUMBER:
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                                                                                                              QVVEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTPFTE
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                                      DTETVGQRALHSILNAAIMISVIVVMTILLVVLYKYRCYKVIHAWLIISSLLLLFFFSFI
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100.0%; Pred. No. 3.4e-186;
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RESULT 26
US-08-706-344C-32
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Best Local Similarity 100.0%; Pred. No. 3.4
Conservative 0; Mismatches
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Patent No. 6248555
GENERAL INFORMATION:
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 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME: KIN, JUDITH U.
REGISTRATION NUMBER: 40,679
REFERENCE/DOCKET NUMBER: 0609.4180001
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-371-2600
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30 (EPO)
CURRENT APPLICATION DATA:
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MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: 60/003,054 FILING DATE: 31-AUG-1995 ATTORNEY/AGENT INFORMATION:
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PRIOR APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: TANZI, RUDOLPH APPLICANT: WASCO, WILMA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
                                                                                                                                                      181
                                                                                                                                                                                        121
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181 YLGEVEKTYNVAVDYITVALLIWN 204
                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET: 1100 NEW CITY: WASHINGTON
                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
                                                                                                                                                                                                                                                                                                                          YLGEVFKTYNVAVDYITVALLIWN 204
                                                                                                                                                                                     QVVEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTPFTE 120
                                                                                                                                                                                                                                                          QVVEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTPFTE 120
                                                                                                                     YLGEVFKTYNVAVDYITVALLIWN 204
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6248555
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USA
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                                 US/08706344C
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; Pred. No. 3.4e-186;
...amatches 0;
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US-08-788-231A-15
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                                                                                                                                 Sequence 15, Application US/08788231A Patent No. 6019974 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 204;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: 202-371-2540
INFORMATION FOR SEQ ID NO:
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FILING DATE: 30-ANC-100

CURRENT APPLICATION NUMBER: US/08/706.3447

CLASSTET: 30-ANC-100
          APPLICANT: L'Hernault, Steven W.
TITLE OF INVENTION: SPE-4 RELATED PEPTIDES,
TITLE OF INVENTION: METHODS
NUMBER OF SEQUENCES: 20
CORRESPONDENCE ADDRESS:
ADDRESSEE: Greenlee, Winner and Sullivan,
STREET: 5370 Manhattan Circle, Suite 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY: linear MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS:
LENGTH: 467 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE: 31-AUG-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
ADDRESSEE: STERNE, KESSLER, GOLDSTEIN &
STREET: 1100 NEW YORK AVENUE, SUITE 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION: Genetic Alterations Related To Familial TITLE OF INVENTION: Alzheimer's Disease NUMBER OF SEQUENCES: 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELECOMMUNICATION INFORMATION: TELEPHONE: 202-371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA: APPLICATION NUMBER:
                                                                                                                                                                                                                                                     121
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                                                                                                                                                                                                                                                                                                                                                                                           61 QVVEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTPFTE
                                                                                                                                                                                                                                                                                                                                                                                                                          61 QVVEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTPFTE 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 MTELPAPLSYFQNAQMSEDNHLSNTVRSQNDNRERQEHNDRRSLGHPEPLSNGRPQGNSR
                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 MTELPAPLSYFQNAQMSEDNHLSNTVRSQNDNRERQEHNDRRSLGHPEPLSNGRPQGNSR
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Boulder
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                                                                                                   ANTIBODIES
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RESULT 28
US-08-670-479-18
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 100.
                                                                                                                                                                                                                                                                                       Patent No. 5973133 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                           Sequence 18, Application US/08670479 Patent No. 5973133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEFAX: (303) 499-808
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                           NUMBER OF SEQUENCES: 24
CORRESPONDENCE ADDRESS:
ADDRESSEE: SmithKline Beecham Corporation
STREET: 709 Swedeland Road
                                 COUNTRY: U.S.A.
ZIP: 19406-0939
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                               APPLICANT: Hardy, John A. APPLICANT: Goate, Alison M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELECOMMUNICATION INFORMATION: TELEPHONE: (303) 499-8080 TELEFAX: (303) 499-8089
                                                                                                                                                                                                                             TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US 60 FILING DATE: 26-JAN-1996 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION: 424
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                              386 FIFYSVLVG 394
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  266 GPLRMLVETAQERNETLFPALIYSSTMVWLVNMAEGDPEAQRRVSKNSKYNAESTERESQ 325
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                                                                                                                     STREET: 709 Swederauc
CITY: King of Prussia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        201 GVVGMISIHWKGPLRLQQAYLIMISALMALVFIKYLPEWTAWLILAVISVYDLVAVLCPK 260
OPERATING SYSTEM:
                   COMPUTER:
                                                                                                                 STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: amino acid
STRANDEDNESS: sir
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME: Ferber, Donna M.
REGISTRATION NUMBER: 33,878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: US/0 FILING DATE: 24-JAN-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
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                 IBM Compatible
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; ORIGINAL SOURCE:
US-08-670-479-18
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                                                                                                                                                                                                                                                                                                                                                        RESULT 29
                                                                                                                                                                                                                                                                               Sequence 4, Application US/08967101 Patent No. 5840540 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
Matches 188; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
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FILING DATE: 26-JUN-1996
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 60/001,500
FILING DATE: 18-JUL-1996
APPLICATION NUMBER: 60/001,800
FILING DATE: 02-AUG-1995
ATTORNEY/ACENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE: pe,
HYPOTHETICAL: NO
ANTI-SENSE: NO
                                                                                                                                                                                                                                               APPLICANT:
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                           NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                        APPLICANT: FRASER, PAUL E
TITLE OF INVENTION: GENETIC SEQUENCES AND PROTEINS RELATED
TITLE OF INVENTION: TO ALZHEIMER'S DISEASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                               396
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                                                                                               STREET: High
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  336 WEAQRDSHLGPHRSTPESRAAVQELSSSILAGEDPEERGVKLGLGDFIFYSVLVGKASAT 395
                                                                    COUNTRY:
                                                                                          STATE:
                                                         ZIP:
                                                                                                                                           ADDRESSEE:
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REFERENCE/DOCKET NUMBER: P5
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ASGDWNTTIACEVAILIGLCLTLLLLAIFKKALPALPISITFGLVEYFATDYLVQPFMDQ 455
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ETLFPALIYSSTMVWLVNMAEGDPEAQRRVSKNSKYNAESTERESQDTVAENDDGGFSEE 335
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                                                                                                                         E: TESTA, HURWITZ & THIBEAULT High Street
                                                                                                                                                                                                                                               ST. GEORGE-HYSLOP, PETER H
ROMMENS, JOHANNA M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
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OPERATING SYSTEM:

PatentIn Release #1.0, Version #1.30

US/08/967,101

PC-DOS/MS-DOS

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: Pitcher, Edmund R.
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 248-7000
TELEPAX: (617) 248-7100
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 467 amino acids
                                                               CLASSIFICATION: 800
ATTORNEY/AGENT INFORMATION:
NAME: Pitcher, Edmund R.
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 248-7000
TELEPAX: (617) 248-7100
INFORMATION FOR SEQ ID NO: 4:
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Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                              SEQUENCE CHARACTERISTICS:
LENGTH: 467 amino acids
                                                                                                                                                                                                                             COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
ADDRESSEE: TESTA, HU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION: GENETIC SEQUENCES AND PROTEINS RELATED TITLE OF INVENTION: TO ALZHEIMER'S DISEASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: ST. GEORGE-HYSLOP, PETER H
APPLICANT: ROMMENS, JOHANNA M
APPLICANT: FRASER, PAUL E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTORNEY/AGENT INFORMATION:
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APPLICATION NUMBER: (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION DATA:
APPLICATION NUMBER: US,
FILING DATE: 10-NOV-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            273
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                          COUNTRY: U.S.A. ZIP: 02110
                                                                                                                                                                                                                                                                                                                                                                                             STREET: High
CITY: Boston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE:
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les 97; Conserv
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                                                                                                                                                                                                              APPLICATION NUMBER:
STRANDEDNESS:
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                amino
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High Street Tower - 125 High Street
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100.0%; Pred. No.
tive 0; Mismatc
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US-08-888-077A-17
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                                                                                                                                                           US-08-888-077A-17
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                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                 TELEFAX: (908) 654-7866
INFORMATION FOR SEQ ID NO: 1
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: ST. GEORGE-HYSLOP, PETER
APPLICANT: ROMMENS, JOHANNA M
APPLICANT: FRASER, PAUL E
TITLE OF INVENTION: GENETIC SEQUENCE
TITLE OF INVENTION: TO ALZHEIMER'S D
                                                                                                                                                                                                                                                                               REFERENCE/DOCKET NUMBER: SC
TELECOMMUNICATION INFORMATION:
TELEPHONE: (908) 654-5000
                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US 01
FILING DATE: 26-JAN-1996
ATTORNEY/AGENT INFORMATION:
NAME: PALIST, THOMAS M
REGISTRATION NUMBER: 36,
                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION: 530 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: ASCII
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
                                                                                                                                                                            MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              273
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                                                                                                                                                                                         TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US/08/888,077A FILING DATE: 03-JUL-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY: USA
ZIP: 07090-1497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: 600 SOUT
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                                                                                                                                                                                                                       LENGTH:
ETAQERNETLFPALIYSSTMVWLVNMAEGDPEAQRRV 309
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                                                                                                   | Similarity
| 97; Conserv
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                                                                                                                                                                                                                     467 amino acids
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                                                                                                   Conservative
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                                                                                                                                                                                                                                                                                                                                                                  UMBER: US 08/592,541
26-JAN-1996
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100.0%; Pr
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                                                                                                                20.8%;
                                                                                                                                                                                                                                                                                                                          36,629
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                                                                                                                Score 97; DB 3; L
Pred. No. 3.2e-84;
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Pred. No. 3.2e-84;
0; Mismatches 0;
                                                                                                   Mismatches
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                                                                                                                             Length 467
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RESULT 33
US-09-127-480-4
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US-09-124-698-4
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                                                                                                                                                                                          Sequence 4, Application US/09127480 Patent No. 6194153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local :
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                                                                                                                                                                       GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEFAX: (617) 248-7100 INFORMATION FOR SEQ ID NO: 4:
                                                       APPLICANT: ST. GEORGE-HYSLOP, PETER H
APPLICANT: ROMMENS, JOHANNA M
APPLICANT: FRASER, PAUL E
TITLE OF INVENTION: GENETIC SEQUENCES
TITLE OF INVENTION: TO ALZHEIMER'S DIS
NUMBER OF SEQUENCES: 183
                                       CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
NAME: Pitcher, Edmund R.
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 248-7000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
LENGTH: 467 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: ST. GEORGE-HYSLOP, PETER H
APPLICANT: ROMMENS, JOHANNA M
APPLICANT: FRASER, PAUL E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                   213 IHWKGPLRLQQAYLIMISALMALVFIKYLPEWTAWLILAVISVYDLVAVLCPKGPLRMLV 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US/09/124,698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
                       ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity 100.0%; es 97; Conservative
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3: TESTA, HURWITZ & THIBEAULT
High Street Tower - 125 High Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   E: TESTA, HURWITZ & THIBEAULT
High Street Tower - 125 High Street
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                                                           TO ALZHEIMER'S DISEASE 183
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                                                                                               GENETIC SEQUENCES AND PROTEINS RELATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                               20.8%; Score 97; DB 3; 100.0%; Pred. No. 3.2e-8; ive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 08/592,541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3.2e-84,
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US-08-496-841C-4
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GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: Pitcher, Edmund R.
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 248-7000
TELEFAX: (617) 248-7100
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY: linear MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION:
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            273
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  273 ETAQERNETLFPALIYSSTMVWLVNMAEGDPEAQRRV 309
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: amino acid
STRANDEDNESS: sir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER:
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                                                                         COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0, Version #1.30

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/496,841C

FILING DATE: 28-Jun-1995
                                 FILING DATE: 28-Jun-1995
CLASSIFICATION: <Unknown>
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS:
ADDRESSEE: Darby & Darby,
STREET: 805 Third Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: ST. GEORGE-HYSLOP, PETER
ROMMENS, JOHANNA M
FRASER, PAUL E
                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: GENETIC SEQUENCES AND PROTEINS RELATED TO ALZHEIMER'S DISEASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ETAQERNETLFPALIYSSTMVWLVNMAEGDPEAQRRV 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IHWKGPLRLQQAYLIMISALMALVFIKYLPEWTAWLILAVISVYDLVAVLCPKGPLRMLV 272
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                                                                                                                                                                                                                                                           CITY: New York
STATE: New York
COUNTRY: U.S.A.
NAME: Paul F. Fehlner, Ph.D. REGISTRATION NUMBER: 35,135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Massachusetts: U.S.A.
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100.0%; Pred. No. 3.2e-84;
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TOPOLOGY: linear

MOLECULE TYPE: protein

SEQUENCE DESCRIPTION: SEQ ID NO: 4:
US-08-496-841C-4
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                                                                                                       ;; TYPE: amino acid;; TOPOLOGY: linear; MOLECULE TYPE: protein; SEQUENCE DESCRIPTION: SEQ
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US-08-496-841C-136
Sequence 136, Application US/08496841C
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GENERAL INFORMATION:
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Best Local (
                                     Matches
                                                                       Query Match
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TELEPHONE: (212) 753-6237
INFORMATION FOR SEQ ID NO: 4:
                                                                                                                                                                                                                                  TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 527-7700
TELEFAX: (212) 753-637
INFORMATION FOR SEQ ID NO: 136:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          213 IHWKGPLRLQQAYLIMISALMALVFIKYLPEWTAWLILAVISVYDLVAVLCPKGPLRMLV 272
213 IHWKGPLRLQQAYLIMISALMALVFIKYLPEWTAWLILAVISVYDLVAVLCPKGPLRMLV 272
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                                   Local Similarity
nes 97; Conserv
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/496,841C
FILING DATE: 28-Jun-1995
                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
NAME: Paul F. Fehlner, Ph.D
REGISTRATION NUMBER: 35,135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
ADDRESSEE: Darby & Darby,
STREET: 805 Third Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: ST. GEORGE-HYSI
ROMMENS, JOHANN
FRASER, PAUL E
                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
LENGTH: 467 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: GENETIC SEQUENCES AND PROTEINS RELATED TO ALZHEIMER'S DISEASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
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97; Conserv
                                                                                                                                                                                                                                                                                                                                                                CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 467 amino acids
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                                                    20.8%;
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                                                 Pred No. 3.2e-84;
                                                                                                                            ID NO: 136:
                                   Mismatches
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3.2e-84
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                                                                   Length 467;
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                                   Indels
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RESULT 37
US-08-788-231A-17
; Sequence 17, Application US/08788231A
; Patent No. 6019974
; Patent No. 6019974
; GENERAL INFORMATION:
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US-09-124-523-4
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Matches
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                                                                                                                                                                                                                                                                                                                                                                                                               TELEFAX: (617) 248-710
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: Pitcher, Edmund R. TELECOMMUNICATION INFORMATION: TELEPHONE: (617) 248-7000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA: APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS:
ADDRESSEE: TESTA, HURWITZ & THIBEAULT
STREET: High Street Tower - 125 High Street
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
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                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        213 IHWKGPLRLQQAYLIMISALMALVFIKYLPEWTAWLILAVISVYDLVAVLCPKGPLRMLV 272
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                                                                                                                                                                                                                                                                                                                                                                     TYPE: amino a STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: US/09/124,523 FILING DATE:
                                                                                                                                                                                                                                                                    Local Similarity les 97; Conserv
                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH:
                                                                                                                                                ETAQERNETLEPALIYSSTMVWLVNMAEGDPEAQRRV 309
                                                                                                                                                                            ETAQERNETLFPALIYSSTMVWLVNMAEGDPEAQRRV 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                      amino acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Massachusetts: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                   467 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ST. GEORGE-HYSLOP, PETER ROMMENS, JOHANNA M FRASER, PAUL E
                             L'Hernault,
                                                                                                                                                                                                                                                                  20.8%; Score 97; ilarity 100.0%; Pred. No. Conservative 0; Mismatch
                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Floppy disk
                                                                                                                                                                                                                                                                                                                                                                         single
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SPE-4 RE
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                             Steven W
                                                                                                                                                                                                                                                                                                                                                                                                                                     4.
             RELATED
                                                                                                                                                                                                                                                                     Mismatches
             PEPTIDES, ANTIBODIES
                                                                                                                                                                                                                                                                                  DB 4; Le 3.2e-84;
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                                                                                                                                                                                                                                                                                                Length 467
                                                                                                                                                                                                                                                                     Indels
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RESULT 38
US-08-967-101-138
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                                                                                                                                                                                                                                              Patent No. 5840540

GENERAL INFORMATION:
GENGE-HYSLOP, PETER H
APPLICANT: ST. GEOGGE-HYSLOP, PETER H
APPLICANT: FORMENS, JOHANNA M
APPLICANT: FRASER, PAUL E
TITLE OF INVENTION: GENETIC SEQUENCES AND PROTEINS RELATED
TITLE OF INVENTION: TO ALZHEIMER'S DISEASE
                                                                                                                                                                                                                                                                                                                                                                                       Sequence 138, Application US/08967101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US 60/010,672
FILING DATE: 26-JAN-1996
ATTORNEY_AGENT INFORMATION:
NAME: Ferber, Donna M.
REGISTRATION NUMBER: 30.78
REFERENCE_DOCKET NUMBER: 60-95
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEPHONE: (303) 499-8080
TELEFAX: (303) 499-8089
INFORMATION FOR SEQ ID NO: 17
                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                             NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
LENGTH: 465 amino acids
                                                                                                                                    STREET: High
CITY: Boston
STATE: Massac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HYPOTHETICAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION DATA:
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CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120 DTETYGQRALHSILNAAIMISVIV 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121 DTETVGQRALHSILNAAIMISVIV 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US/08/788,231A FILING DATE: 24-JAN-1997 CLASSIFICATION: 424
                                                                                                                  COUNTRY:
     SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: amino acid
STRANDEDNESS: sir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Match 18.0%; Score 84; DB 3; Le Local Similarity 100.0%; Pred. No. 7.9e-72; O: Mismatches 0;
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                                                                                                    02110
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                                                                                                                                        Massachusetts
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                                                                                                                    U.S.A.
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   PatentIn Release #1.0, Version #1.30
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Query Match
Best Local Similarity
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US-08-592-541-138
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                                                                          ATTORNEY/AGENT INFORMATION:
NAME: PICCHEY, Edmund R.
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 248-7000
TELEPAX: (617) 248-7100
INFORMATION FOR SEQ ID NO: 138:
SEQUENCE CHARACTERISTICS:
LENGTH: 372 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Patent No. 5986054 GENERAL INFORMATION:
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Best Local Similarity
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
               MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
ADDRESSEE: TESTA, HU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: ST. GEORGE-HYSLOP,
APPLICANT: ROMMENS, JOHANNA M
APPLICANT: FRASER, PAUL E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: Pitcher, Edmund R. TELECOMMUNICATION INFORMATION: TELEPHONE: (617) 248-7000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION:
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PRIOR APPLICATION DATA:
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                               TYPE: amino a STRANDEDNESS: TOPOLOGY: lin
                                                                                                                                                                                                                                  APPLICATION NUMBER: US/08/592,541 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                 STREET: High
CITY: Boston
                                                                                                                                                                                                                    CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                    ZIP: 02110
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                                                                                                                                                                                                                                                                                                                                                                                                    STATE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: US/08/967,101 FILING DATE: 10-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ENGTH:
                                                              amino acid
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High Street Tower - 125 High Street
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Score 28; Pred. No.

1.5e-18; DB 2;

Length 372

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RESULT 41
US-09-127-480-138
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                                             Sequence 138, Application US/09127480
PATENT NO. 6194153
GENERAL INFORMATION:
APPLICANT: ST. GEORGE-HYSLOP, PETER H
APPLICANT: ROMMENS, JOHANNA M
APPLICANT: FRASER, PAUL E
TITLE OF INVENTION: GENETIC SEQUENCES
TITLE OF INVENTION: TO ALZHEIMER'S DIS
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INFORMATION FOR SEQ ID NO: 1
SEQUENCE CHARACTERISTICS:
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: Pitcher, Edmund R.
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 248-7000
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               NUMBER OF SEQUENCES:
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                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: amino acid
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5. 6117978
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                                                                                                                                                                                                                                                                                                                                                                                                                                                        372 amino acids
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FRASER, PAUL
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TESTA, HURWITZ & THIBEAULT
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                            GENETIC SEQUENCES AND PROTEINS RELATED TO ALZHEIMER'S DISEASE
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125 High Street
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US-08-496-841C-138
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STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-09-127-480-138
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 138, Application Patent No. 6210919
GENERAL INFORMATION:
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Matches
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INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
LENGTH: 372 amino acids
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APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION DATA:
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MEDIUM TYPE: Floppy disk
          COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/496,841C
FILING DATE: 28-Jun-1995
CLASSIFICATION: <UNknown>
ATTORNEY/AGENT INFORMATION:
NAME: Paul F. Fehlner, Ph.D.
REGISTRATION NUMBER: 35,135
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 527-7700
TELEPHONE: (212) 527-7700
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CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
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                                                                                                                                                                                                     ZIP: 10022
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES: 175
CORRESPONDENCE ADDRESS:
ADDRESSEE: Darby & Darby,
                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: GENETIC SEQUENCES AND PROTEINS RELATED TO ALZHEIMER'S DISEASE
                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: ST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
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Boston
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                                                                                                                                                                                                                                                      COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                        CITY: New York
STATE: New York
                                                                                                                                                                                                                                                                                                        STREET: 805 Third Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Application US/08496841C
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linear
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FRASER, PAUL E
                                                                                                                                                                                                                                                                                                                                                                                                                     GEORGE-HYSLOP, PETER H
MENS, JOHANNA M
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100.0%; Pr
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Pred. No.
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RESULT 44
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US-09-124-523-138
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US-09-124-523-138
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                                                                                                                                        Query Match
                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
APPLICANT: ST. GEO
APPLICANT: ROMMENS
APPLICANT: FRASER,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 138, Application US/09124523 Patent No. 6395960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INFORMATION FOR SEQ ID NO: 138: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
NAME: Pitcher, Edmund R.
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
LENGTH: 372 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION: PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                         253 ISVYDLVAVLCPKGPLRMLVETAQERNE 280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: GENETIC SEQUENCES AND PROTEINS RELATED TITLE OF INVENTION: TO ALZHEIMER'S DISEASE
                                            183 ISVYDLVAVLCPKGPLRMLVETAQERNE 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   253 ISVYDLVAVLCPKGPLRMLVETAQERNE 280
                                                                                                                                                                                                                                            LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   183 ISVYDLVAVLCPKGPLRMLVETAQERNE 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                     TOPOLOGY:
                                                                                                                                                                                                                   STRANDEDNESS:
                                                                                                         Local Similarity es 28; Conserv
                                                                                                                                                                                                                                                                                                               TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                              FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET: High
CITY: Boston
                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity 100.
nes 28; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY: linear MOLECULE TYPE: protein SEQUENCE DESCRIPTION: SEQ ID NO: 138:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       02110
                                                                                                                                                                                                                                  amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Massachusetts: U.S.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: amino
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              E: TESTA, HURWITZ & High Street Tower -
                                                                                                                                                                                                                                                                                              (617)
(617) 24
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ROMMENS, JOHANNA M
FRASER, PAUL E
                                                                                                                                                                                                  ss: single
linear
                                                                                                                                                                                                                                                                                              248-7100
                                                                                                                     6.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6.0%; Score 28;
100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                             248-7000
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                                                                                                                                                                                                                                                                                                                                                                                           US/08/592,541
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                                                                                                     %; Score 28; DB
%; Pred. No. 1.5
0; Mismatches
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125 High Street
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                                                                                                                                     DB 4;
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1.5e-18;
                                                                                                                       1.5e-18;
                                                                                                                                  Length 372;
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RESULT 45
US-08-967-101-137
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                                                                                                                                                                                                                                                                                                                 Sequence 137, Application US/08967101 Patent No. 5840540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 6.0%; Score 28; Best Local Similarity 100.0%; Pred. No. Matches 28; Conservative 0; Mismatc
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                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
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TITLE OF INVENTION: A
TITLE OF INVENTION: C
NUMBER OF SEQUENCES:
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                    TITLE OF INVENTION:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                     APPLICANT: ST. GEORGE-HYSLOP, PETER H
APPLICANT: ROMMENS, JOHANNA M
APPLICANT: FRASER, PAUL E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: Granahan Esq., Patric REGISTRATION NUMBER: 32,227
REFERENCE/DOCKET NUMBER: HU
TELECOMMUNICATION INFORMATION:
TELEPHONE: (781) 861-6240
                                                                                                                                                                 CORRESPONDENCE ADDRESS:
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ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/875,972
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MEDIUM TYPE: Floppy disk
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                                                                                                                                                                                                                                                                                                                                                                                                                                               253 ISVYDLVAVLCPKGPLRMLVETAQERNE 280
                                                                                                                                                                                                                                                                                                                                                                                                                              259 ISVYDLVAVLCPKGPLRMLVETAQERNE 286
                                                          COUNTRY: U.S.A. ZIP: 02110
                                                                                                            STREET: High
CITY: Boston
                                                                                              STATE:
                                                                                                                                                  ADDRESSEE:
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TOPOLOGY: li
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CITY: Lexington
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5. 5985564
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                                                                                           Massachusetts
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                                                                                                                             E: TESTA, HURWITZ & THIBEAULT
High Street Tower - 125 High Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Huntington Potter and Jinhue Li
WYENTION: ASSAY FOR IDENTIFYING GENES CAUSING
VYENTION: CHROMOSOME NON-DISJUNCTION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
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SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          08-AUG-97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       861-9540
                                                                                                                                                                                                     GENETIC SEQUENCES AND PROTEINS RELATED TO ALZHEIMER'S DISEASE
                                                                                                                                                                                      183
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NAME: Pitcher, Edmund R.
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 248-7100
TELEPAX: (617) 248-7100
INFORMATION FOR SEQ ID NO: 137:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Patent No. 5986054
GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                              NAME: Pitcher, Edmund R.
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 248-7000
TELEFAX: (617) 248-7100
INFORMATION FOR SEQ ID NO: 137:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: ROMMENS, JOHAN
APPLICANT: FRASER, PAUL E
TITLE OF INVENTION: GENETI
TITLE OF INVENTION: TO ALZ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CLASSIFICATION: 435
PRIOR APPLICATION NUMBER:
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CURRENT APPLICATION DATA:
APPLICATION NUMBER: US,
FILING DATE: 10-NOV-199
MOLECULE TYPE:
                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: ST. GEORGE-HYSLOP, PETER H
APPLICANT: ROMMENS, JOHANNA M
APPLICANT: FRASER, PAUL E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRANDEDNESS:
TOPOLOGY: 11r
                 TOPOLOGY:
                              STRANDEDNESS:
                                                TYPE: amino acid
                                                                                                                                                                                                  APPLICATION NUMBER: FILING DATE: CLASSIFICATION: 800
                                                                                                                                                                                                                                                                                                                                                                COUNTRY: UZIP: 02110
                                                                                                                                                                                                                                                                                                                                                                                                                  CITY: Boston
                                                                                                                                                                                                                                                                                                                                                                                                                                STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: amino acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
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                                                                   LENGTH:
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                                                                448 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                E: TESTA, HURWITZ & High Street Tower -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Application US/08592541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6.0%; Score 28; DB 2; Ilarity 100.0%; Pred. No. 1.8e-18; Conservative 0; Mismatches 0;
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linear
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PatentIn Release #1.0, Version #1.30
                 linear
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protein
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                              single
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US/08/967,101
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125 High Street
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RESULT 48
US-09-124-698-137
; Sequence 137, Application US/09124698
; Patent No. 6117978
; GENERAL INFORMATION:
; GENERAL OF GEORGE-HYSLOP, PET
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
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Best Local Similarity
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GENERAL INFORMATION:
APPLICANT: ST. GEORGE-HYSLOP, PETER
APPLICANT: ROMMENS, JOHANNA M
APPLICANT: FRASER, PAULE
APPLICANTE FR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: PALLS1, THE REGISTRATION NUMBER: 36,629 REGISTRATION NUMBER: SCHEF REFERENCE/DOCKET NUMBER: SCHEF TELECOMMUNICATION INFORMATION: (908) 654-5000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: ST. GEORG
APPLICANT: ROMMENS,
APPLICANT: FRASER, F
TITLE OF INVENTION:
TITLE OF INVENTION:
APPLICANT: ST. GEORGAPPLICANT: ROMMENS, APPLICANT: FRASER, ITITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/592,541
FILING DATE: 26-JAN-1996
ATTORNEY/AGENT INFORMATION:
NAME: PALISI, THOMAS M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION DATA:
APPLICATION NUMBER: US,
FILING DATE: 03-JUL-19;
CLASSIFICATION: 530
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                                                                                                                                                                                 253 ISVYDLVAVLCPKGPLRMLVETAQERNE 280
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SOFTWARE: ASCII
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                                                                 FRASER, PAUL
                                                                                        ST. GEORGE-HYSLOP, PETER H
ROMMENS, JOHANNA M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
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SYSTEM: PC-DOS/MS-DOS
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36,629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     03-JUL-1997
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TO ALZHEIMER'S DISEASE AND USES THEREFOR.
   GENETIC SEQUENCES AND PROTEINS RELATED TO ALZHEIMER'S DISEASE
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100.0%; Pred. No.
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Pred. No.
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CORRESPONDENCE ADDRESS:
ADDRESSEB: TESTA, HURWITZ & THIBEAULT
STREET: High Street Tower - 125 High Street

WUMBER OF SEQUENCES:

183

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RESULT 49
US-09-127-480-137
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|Best Local Similarity 100.0%; Pred. No. 1.8e-18;
                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:

APPLICANT: ST. GEORGE-HYSLOP, PETER H
APPLICANT: ROMMENS, JOHANNA M

APPLICANT: FRASER, PAUL E

TITLE OF INVENTION: GENETIC SEQUENCES AND PROTEINS
TITLE OF INVENTION: TO ALZHEIMER'S DISEASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
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INFORMATION FOR SEQ ID NO: 137:
SEQUENCE CHARACTERISTICS:
                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY AGENT INFORMATION:
NAME: Pitcher, Edmund R.
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 248-7000
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                              SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY: linear MOLECULE TYPE: protein
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COMPUTER READABLE FORM:
COMPUTER TEADABLE FORM:
TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
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PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            253 ISVYDLVAVLCPKGPLRMLVETAQERNE 280
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                                    FILING DATE:
CLASSIFICATION:
                                                                                                                                                                                                                                   COUNTRY:
                                                                                                                                                                                                                                                                          CITY: Boston
                                                                            APPLICATION NUMBER:
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High Street Tower - 125 High Street
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Search completed: February Job time: 41.1598 secs

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: SOFTWARE: FastSEQ for Windows Version 3.0
: SEQ ID NO 2
: LENGTH: 448
: TYPE: PRT
: ORGANISM: Homo Saplen
US-09-227-725A-2
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                                                                                                                                                                                                                   GENERAL INFORMATION:
APPLICANT: St. George-Hyslop, Peter H.
APPLICANT: Rommens, Johanna
APPLICANT: Rommens, Johanna
APPLICANT: Fraser, Paul E.
TITLE OF INVENTION: Alzheimer's Related Proteins and Methods
TITLE OF INVENTION: of Use
FILE REFERENCE: 1034/1F810-US1
CURRENT APPLICATION NUMBER: US/09/227,725A
CURRENT FILING DATE: 1999-01-08
NUMBER OF SEQ ID NOS: 4
                                              Query Match
Best Local Similarity 100.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEPHONE: (617) 248-700
TELEFAX: (617) 248-7100
INPORMATION FOR SEQ ID NO: 1
SEQUENCE CHARACTERISTICS:
LENGTH: 448 amino acids
                                                                                                                                                                                                                                                                                                                                                                                 Sequence 2, Application US/09227725A Patent No. 6383758
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Matches 28; Conserva
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NAME: PITCHEF, Edmund R.
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 248-7000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE:
              253 ISVYDLVAVLCPKGPLRMLVETAQERNE 280
259 ISVYDLVAVLCPKGPLRMLVETAQERNE 286
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TOPOLOGY: lir
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                                                        6.0%; Score 28; DB 4;
100.0%; Pred. No. 1.8e-
tive 0; Mismatches
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Perfect score:
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// SIDS2/gcgdata/geneseq/geneseqp-embl/AA1983.DAT: *
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// SIDS2/gcgdata/geneseq/geneseqp-embl/AA1987.DAT: *
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  13     21     AAB01687       colon cancer     228     7     1.5     17     21     AAB07037 | lin 1 deriv     221     7     1.5     8     22     AAW05771       lin 1 deriv     222     7     1.5     8     22     AAB66576       cretase rel     223     7     1.5     8     22     AAB61338       us active s     224     7     1.5     8     23     AAU99492       sing casset     225     7     1.5     8     23     AAU75254       ping casset     226     7     1.5     11     7     AAW05807       cid sequenc     227     7     1.5     13     21     AAB01687       cid sequenc     228     7     1.5     17     21     AAB52037 | y peptide         220         8         1.7         2958         22         ABB71368.           int human         221         7         1.5         7         17         AAW05771           in 1 deriv         222         7         1.5         8         22         AAB65376           retase rel         223         7         1.5         8         22         AAB61338           s 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                              AAW23965 standard;
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                                                                            (FAD) and may be causative of other disorders, e.g. cognitive, intellectual, neurological or physiological disorders such as cerebral haemorrhage, schizophrenia, depression, mental retardation and epilepsy. Use of the nucleic acids and proteins comprising or derived from the presentlins is made in screening and diagnosing FAD, identifying and developing therapeutics for treatment of FAD, and in producing cell lines and transgenic animals useful as models of FAD. Methods for identifying substances that bind to, or modulate the activity of a presentlin protein, and methods for identifying substances that affect the interaction of a presentlin-interacting protein with a presentlin protein are also
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05-JUL-1996;
12-JUL-1996;
08-NOV-1996;
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                                                                                                                                                                                                         This polypeptide comprises human presentlin-1 (hPS1). Its amino acid sequence was deduced from an isolated cDNA clone (see AAV04667 Another hPS1 sequence (see AAW33964) results from alternative splicing of the hPS1 mRNA transcript. A murine PS1 homologue (see AAW23966) and a human presentiln-2 protein (see AAW23967) are also provided. Mutations in the PS-1 and PS-2 genes are linked to the development in humans of forms of familial Alzheimer's disease
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ducts for use in detection, diagnosis
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                                                                                                                                                                                                                                                                                                                                                                                                                                     GOVERNING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Asp2537Ala mutation site, residue 254-286 deletion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Phell7Ser mutation
                                                                                                                                                                                                                                                                                                     238pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "residue 254-286 deletion mutant, associated with Asp253Ala mutation (Claim 1)" ^{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                             St George-Hyslop PH;
%; Score 438; DB
%; Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNCIL.
                        DВ
                                                                                                                                                                                                                                                                                                                                      useful for developing and therapy of Alzheimer's
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           site
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 associated with (Claim 1)"
                      Length 463;
  Indels
                                                                                                                                                                                                                                                                    AAV04667)
  0
 Gaps
  0
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AAW05733
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                              31-JUL-1995;
28-APR-1995;
28-JUN-1995;
                                New presentlin genes - useful for diagnosis, therapy and drug screening of familial Alzheimer's disease, cerebral disorders,
                                                                                                                                                                                                                                                                                                                                                                          23-JUL-1997
                                                                                                                                                                                                                                                                                                                                                                                                  AAW05733;
             Claim
                                                                      WPI; 1996-497631/49
N-PSDB; AAT40028.
                                                                                                                                                                                                             29-APR-1996;
                                                                                                                                                                                                                                    31-фст-1996
                                                                                                                                                                                                                                                        W09634099-A2
                                                                                                                                                                                                                                                                                                      depression; antibody;
                                                                                                                                                                                                                                                                                                                 Presenilin-1; human; hPS1-1; hPS1-2; PS-2; integral membrane protein; AD; familial Alzheimer's disease; cerebral haemorrhage; schizophrenia;
                                                                                                                                                                                                                                                                                                                                                     Presenilin-1-1
                                                                                                                                                                                                                                                                                                                                                                                                                         AAW05733
                                                                                                      Fraser PE,
                                                                                                                            (HSCR-) HSC RES & DEV LP.
(UTOR ) UNIV TORONTO GOVERNING
                                                                                                                                                                                                                                                                               Homo sapiens
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ENDDGGFSEEWEAQRDSHLGPHRSTPESRAAVQELSSSILAGEDPEERGVKLGLGDFIFY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MLVETAQERNETLFPALIYSSTMVWLVNMAEGDPEAQRRVSKNSKYNAESTERESQDTVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DYLVQPFMDQLAFHQFYI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SVLVGKASATASGDWNTTIACFVAILIGLCLTLLLLAIFKKALPALPISITFGLVFYFAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ENDDGGFSEEWEAQRDSHLGPHRSTPESRAAVQELSSSILAGEDPEERGVKLGLGDFIFY
             2;
                                                                                                                                                                                                                                                                                                                                                                                                                         standard;
            Page 128-130;
                                                                                                      Rommens JM,
                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                              95US-0509359.
95US-0431048.
95US-0496841.
                                                                                                                                                                                                             96WO-CA00263
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                                                                                                                                                                                                                                                                                                      gene expression
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                                                                                                      St George-Hyslop
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                                                                                                                             COUNCIL.
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389 325 329 265 269 205 209

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AAW239C
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AC AAW2
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AC AAW2
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DT 20-J
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CE Huma
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KW CETE
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Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          diseases. These proteins, or vectors that express them or containing antisense sequences, antibodies selective for mutant forms of these proteins (such as AAW05736) and modulators of PS gene expression are potentially useful for treatment of AD etc. Transgenic animals are use
                                                                                                                                                                                                                                                                                                            AAW23964 standard;
                                             Homo sapiens
                                                                                       mental
                                                                                                              cerebral haemorrhage;
                                                                                                                                Presenilin-1; PS1 gene; human; familial Alzheimer's disease;
                                                                                                                                                                           Human presentlin-1.
                                                                                                                                                                                                                       20-лиг-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            models for drug screening. The antibodies can also be used e.g. for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DTETVGQRALHSILNAAIMISVIVVMTILLVVLYKYRCYKVIHAWLIISSLLLLFFFSFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QVVEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTPFTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LPEWTAWLILAVISYYDLVAVLCPKGPLRMLVETAQERNETLFPALIYSSTMVWLVNMAE
                                                                                                                                                                                                                                                                                                                                                                                                                        TLLLLAIFKKALPALPISITFGLVFYFATDYLVQPFMDQLAFHQFYI 467
                                                                                                                                                                                                                                                                                                                                                                                                                                               TLLLLAIFKKALPALPISITFGLVFYFATDYLVQPFMDQLAFHQFYI 467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VQELSSSILAGEDPEERGVKLGLGDFIFYSVLVGKASATASGDWNTTIACFVAILIGLCL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VQELSSSILAGEDPEERGVKLGLGDFIFYSVLVGKASATASGDWNTTIACFVAILIGLCL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GDPEAQRRVSKNSKYNAESTERESQDTVAENDDGGFSEEWEAQRDSHLGPHRSTPESRAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GDPEAQRRVSKNSKYNAESTERESQDTVAENDDGGFSEEWEAQRDSHLGPHRSTPESRAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LPEWTAWLILAVISVYDLVAVLCPKGPLRMLVETAQERNETLFPALIYSSTMVWLVNMAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                YLGEVFKTYNVAVDYITVALLIWNFGVVGMISIHWKGPLRLQQAYLIMISALMALVFIKY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         YLGEVFKTYNVAVDYITVALLIWNLGVVGMISIHWKGPLRLQQAYLIMISALMALVFIKY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       466;
                                                                                       retardation;
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                                                                                       diagnosis;
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99.8%;
                                                                                                              schizophrenia; depression; epilepsy;
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Pred. No. 0;
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                                                                                       therapy;
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Location/Qualifiers

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264
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260
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                    /note=
286
                                   /note=
285
                                                                                                                                                                                                          /note= "Ile439Val mutation site 257
                                                                                                                                                                                                                                     /note= "transmembrane domain 177
                                                                                                                                                                                                                        /note= "Phell7Ser mutation site
439
                                                                                                                                                                                      258..290
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/label= TM1
/note= "transmembrane
                                                                                                                                                                                                                                                           /note= "hydrophilic
408..428
                                                                                                                                                                                                                                                                                                                                                                                         /note= "hydrophilic
195..212
                                                        /note=
                                                                                                                                                                                            /note= "Asp257Ala mutation site, residue 258-290 deletion
                                                                                                                                                                                                                                                                                                                                                    /label= TM4-5
/note= "hydrophilic
                                                                                                                                                                                                                                                                                                                                                                                                               184..
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133..154
/note=
                                                                                                                                                          /note= "Ile143Thr mutation
                                                                                                                                                                               /note=
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                                                                                                                                                                                                                                                                                 263..407
                                                                                                                                                                                                                                                                                        'note=
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                                                                                                                                                                                                                                                                                                           /note= "hydrophilic loop"
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155..163
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                                                                                                               "Ala260Val mutation
                                                                                                                                            "Met146Leu
"Leu322Val mutation
              "Leu286Val
                            "Ala285Val
                                         "Glu280Gly
                                                        "Glu280Ala
                                                                      "Pro267Ser
                                                                                   "Pro264Leu
                                                                                                 "Cys263Arg
                                                                                                                             "Leu171Pro mutation
                                                                                                                                                                       "residue 258-290 deletion mutant, associated with Asp257Ala mutation (Claim 1)" ^{\circ}
                                                                                                                                                                                                                                                                                                TM6
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Misc-difference 146
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Misc-difference 115
       This polypeptide comprises human presenilin-1 (hPS1). Its amino acid sequence was deduced from an isolated CDNA clone (see AAV04666). Another hPS1 sequence (see AAW2965) results from alternative splicing of the hPS1 mRNA transcript. A murine PS1 homologue (see AAW23966) and a human presenilin-2 protein (see AAW23967) are also provided. Mutations in the PS-1 and PS-2 genes are linked to the development in humans of forms of familial Alzheimer's disease (FAD) and may be causative of other disorders, e.g. cognitive, intellectual, neurological or physiological disorders such as
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18-JUL-1996;
06-JUN-1996;
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Alzheimer's disease;
apoptosis; PS1/467.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CC specifically stated as not being in the nucleic acid of the invention, CC which encodes the PS1/429 presentlin peptide PS1/429 (II). Cells CC transformed with the DNA are used to produce recombinant (II) and CC analogues, useful e.g. as immunogens for generating an immune response CC against PS1/429. (II) is a new product of the PS1 gene, mutations in CC which cause Alzheimer's disease (AD). The nucleic acids are generally CC useful as probes for detection and quantification of PS1/429, CC useful as probes for detection and quantification of PS1/429, CC useful arly for diagnosis of AD, especially the target sequences that CC hybridise with probes are isolated for sequencing. Antibodies (AD) can also be diagnosed at the protein level using Ab as immunoassay reagents. CC, Ab can also be used to identify epitopes and for affinity purification of CC of the PS1/429 gene, and both nucleic acids and peptides are useful as CC size markers in electrophoresis, chromatography etc. The transgenic CC animals are used as models for AD, e.g. for testing drugs. Regulators of CC the PS1/429 gene or polypeptide can be used to treat e.g. AD or diseases CC involving mitochondrial pathology, apoptosis and neurodegeneration. CC synthetic or natural compounds. (II) may also be used to target other CC coding sequences to particular cellular locations.
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              TLLLLAIFKKALPALPISITFGLVFYFATDYLVQPFMDQLAFHQFYI
                                TLLLLAIFKKALPALPISITFGLVFYFATDYLVQPFMDQLAFHQFYI 467
                                                                                          VQELSSSILAGEDPEERGVKLGLGDFIFYSVLVGKASATASGDWNTTIACFVAILIGLCL
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                                                                          VQELSSSILAGEDPEERGVKLGLGDFIFYSVLVGKASATASGDWNTTIACFVAILIGLCL
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Pred. No. 0;
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mutant presentlin gene. The mutant presentlin gene causes amino acid substitutions at 1 or more positions of 79, 82, 96, 115, 120, 135, 139, 143, 146, 163, 209, 213, 231, 235, 246, 250, 263, 264, 267, 269, 280, 285, 286, 290, 318, 384, 392, 410, 426 and 436, with corresponding N-terminals being e.g. A79V, V82L, A426 and P436S, particularly by replacing isoleucine of position 213 by another amino-acid especially threonine. The gene mutant animals e.g. mice can be used as model animals for the study of human Alzheimer's diseases and to screen and evaluate substances as candidates for prevention and/or therapy of Alzheimer's diseases in patients. They can over-produce amyloid beta protein by the presention 1 gene to cause nerve cell death or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                peeling off in the hippocampus earlier. Such animals are being pathologically close to human patients with Alzheimer's diseases. The present sequence represents human presenilin-1, as given in the present present sequence.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mutant presenilin-1 gene-introduced animals, useful as model animal for study of Alzheimer's diseases in human and screening substances for prevention and/or treatment of the diseases
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                                                                                                                                                                          The present sequence represents wild type human presenilin 1 (PS1) protein. The specification describes a method for identifying substances that alter the interaction of a presenilin with a presenilin-binding protein. The method comprises contacting the interacting domain of a presenilin protein to a presenilin-binding protein in the presence of a test substance, and measuring the interaction of the presenilin and the presenilin-binding protein. The method can be used to screen individuals for presenilin alleles associated with Alzheimer's disease and related disorders, such as senile dementia's, psychiatric diseases such as schizophrenia and depression, and neurological disease, such as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human; presentlin 1; PS1; presentlin-binding protein; interacting domain; presentlin allele; Alzheimer's disease; sentle dementia; psychiatric disease; schizophrenia; depression; neurological disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Disclosure; Page 34-36; 40pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Alzheimer's disease - useful
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                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Identifying substances that alter presentlin interactions, useful for screening individuals for presentlin alleles associated with Alzheimer's disease - useful for diagnosts of Alzheimer's disease
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                              Stimulation of nerve cell growth using human Neural Plakophilin Related Armidillo Protein (hNPRAP) polypeptide, useful for the treatment of diseases such as Alzheimer's, Parkinson's, and stroke -
                                                                                                                                                                                17-A0G-2000
                                                                        WPI;
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                            09-MAR-2001; 2001WO-GB01059
                                                                              13-SEP-2001
                                                                                                                                WO200167097-A2
                                                                                                                                                                                                                                neurodegenerative disease; Al neuronal disorder; cognitive
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sease; Alzheimer's disease; nootropic; prophylaxis;
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Identification of such mutations assist in the diagnosis of or susceptibility to Alzheimer's or other conditions associated with presentlin and in assessing the physiology of such disorders. Catenin pl20 DNAs are also used in hybridisation studies to monitor expression pl20 genes and in particular for up or down regulation of catenin pl20 expression. The present sequence is human presentlin-1 (PS-1) protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The invention relates to a method for identifying modulators of presentilin and catenin pl20. Modulators of catenin pl20 and prace useful for the treatment and prophylaxis of disorders that responsive to modulation of presentilin/catenin pl20 activity.
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                                                                                                GDPEAQRRVSKNSKYNAESTERESQDTVAENDDGGFSEEWEAQRDSHLGPHRSTPESRAA
                                                                                                                                                                                   GDPEAQRRVSKNSKYNAESTERESQDTVAENDDGGFSEEWEAQRDSHLGPHRSTPESRAA
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g presenilin-catenin pl20 interaction and thus for
disorder e.g., Alzheimer's disease comprises enhau
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Best Local Sim
Matches 466;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Identifying a modulator of presentilin function by determining the ability of presentilin to bind to a KIAA0253 polypeptide in the presence and absence of a test compound, useful in the treatment or prophylaxis of Alzheimer's disease -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
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DB; AAH74993.
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                                                             The invention relates to human Par-4 protein, presenilin protein (PS1 and PS2) and their corresponding DNA molecules. The invention also relates to a method for identifying inhibitors of neuronal degeneration, comprising cotransfecting eukaryotic host cells expressing presentlin (PS), with a Par-4 DNA, and an NF-kappa B dependent reporter construct, exposing the cotransfected cells to a candidate molecule and monitoring the ability of the candidate molecule to induce NF-kappa B activation. Presentlin proteins participates in nuclear factor kappa B (NF-kappa B) (Signalling and activation. The inhibitors of neuronal degeneration are useful for treating neurodegenerative disorders such as Alzheimer's disease, Parkinson's disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's syndrome, nerve deafness, Meniere's disease and also for treating peripheral neuropathies, motorneuron disorders such as anyotrophic lateral sclerosis (ALS), Bell's palsy and various conditions involving contact accuracy and activations.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human; Par-4; presentlin; PS1; neuroprotective; nuclear factor kappa B; NF-kappa B; neuronal degeneration; spinal muscular atrophy; paralysis; peripheral neuropathy; motorneuron disorder; neurodegenerative disorder; Parkinson's disease; Meniere's disease; multiple sclerosis; Bell's palsy;
                                                                                                                                                                                                                                                                                                                                Claim
                                                                                                                                                                                                                                                                                                                                                                   presenilin or Par-4
                                                                                                                                                                                                                                                                                                                                                                             Identifying inhibitors of neuronal degeneration useful for treating e.g. Alzheimer's disease, by determining the ability of a compound to induce nuclear factor kappa B activation, with the involvement of
                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2001-451872/48,
N-PSDB; AAE05466.
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04-JAN-2001;
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                                involving spinal muscular atrophy and is human presenilin (PS1) protein.
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                                                                                                                                                                                                                                                                                                                               4; Page 60-61; 66pp; English.
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Best Local Similarity 99.4 Matches 466; Conservative

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Score 366; Pred. No. 0;

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                                                                                                                        Isolated DNA molecule comprising promoter of the sel-12 gene Caenorhabditis elegans operably linked to heterologous gene, expression in neural cells and is useful to develop drugs to neuronal disorders -
                                                                                   Claim 2;
                                                                                                                                                                                                                                                     WPI; 2002-478281/51.
N-PSDB; AAL47323.
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                                                                              Fig 4; 78pp;
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Best Local S
Matches 466
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neuroprotective;
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                                                                     12-SEP-2001;
                                                                                                                                    Homo sapiens
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                                                 12-SEP-2000;
                                                                                           21-MAR-2002
                                                                                                               NO200222862-A2
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                                                                                                                                                                                                 presenilin-1,
                                                                                                                                                       integrin-linked kinase; IIK; presenilin-1;
secretase; apoptosis; Alzheimer's disease; 
rotective; cytostatic; cancer.
                             GLAXO GROUP
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99.8%;
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Matches 466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    between integrin-linked kinase (IIK) and presentlin-1 (PS1) comprising providing IIK, PS1 or their functional variants, as first and second components respectively, contacting the components in the presence of a test agent under conditions that in absence of the agent, would permit the components to interact and determining whether the agent is capable of modulating the interaction between the components. Also included are the method above where the components are protein kinase beta (PKB), gamma secretase or their functional variants, test kits for carrying out the methods and an agent identified by the methods. The methods are used for identifying an agent that modulates interaction between IIK and PS1. or PKB or gamma secretase. The agent host suffering from a condition associated with an interaction between the condition associated with an interaction between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ILK and PS1, activity of PKB, activity of gamma-secretase, apoptosis, cancer and Alzheimer's disease. The agent is also useful for manufacturing a medicament for use in treatment of the above mentioned conditions. The present sequence represents human presentlin-1, PS-1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI;
                  AAE17051;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Identifying agent that modulates interaction between integrin-linked kinase and presentiln-1, useful for treating Alzheimer's disease, and identifying agent that modulates protein kinase B or gamma secretase
                                                AAE17051 standard;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             invention relates to identifying an agent modulating
                                                                                                                           TLLLLAIFKKALPALPISITFGLVFYFATDYLVQPFMDQLAFHQFYI 467
                                                                                                                                                                                                                                                                         GDPEAQRRVSKNSKYNAESTERESQDTVAENDDGGFSEEWEAQRDSHLGPHRSTPESRAA
                                                                                                                                                                                                                                                                                                                                                                                                      YLGEVFKTYNVAVDYITVALLIWNLGVVGMISIHWKGPLRLQQAYLIMISALMALVFIKY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DTETVGQRALHSILNAAIMISVIVVMTILLVVLYKYRCYKVIHAWLIISSLLLLFFFSFI 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QVVEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTPFTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QVVEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTPFTE
                                                                                                                                                                                         LPEWTAWLILAVISVYDLVAVLCPKGPLRMLVETAQERNETLFFALIYSSTMVWLVNMAE
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                                                                                                                                                                                                                                                          GDPEAQRRVSKNSKYNAESTERESQDTVAENDDGGFSEEWEAQRDSHLGPHRSTPESRAA
                                                                                                                                                                                                                                                                                                                       LPEWTAWLILAVISVYDLVAVLCPKGPLRMLVETAQERNETLFPALIYSSTMVWLVNMAE
                                                                                                                                                                                                                                                                                                                                                                                     YLGEVFKTYNVAVDYITVALLIWNFGVVGMISIHWKGPLRLQQAYLIMISALMALVFIKY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
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99.8%;
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Pred. No. 0;
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CC Alzheimer's disease drugs in vivo. The present sequence is human
                                                                                                                                                                                                                    Matches 466;
                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      numan; presenilin 1; PS1; amyloid precursor protein; APP; drug scree Alzheimer's disease; Parkinson's disease; multiple sclerosis; stroke Huntington's disease; amylotrophic lateral sclerosis; Picks disease; head injury disease; frontal lobe dementia; cerebellar degeneration; ischaemic injury; schizophrenia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Novel isolated mutant presenilin 1 and presenilin 2 polypeptides, useful for screening of drugs for treating pathologies associated vaberrant amyloid precursor protein processing, such as Alzheimer's
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Disclosure; Fig 1; 80pp; English.
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                                                                                                                                                                                                                                                                             Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       29-JUN-2001;
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                                                                                                                                                                                                                                   Local Similarity
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                                                                                                                                                                                                                                                                                                          wild
                                        MTELPAPLSYFQNAQMSEDNHLSNTVRSQNDNRERQEHNDRRSLGHPEPLSNGRPQGNSR
YLGEVEKTYNVAVDYITVALLIWNLGVVGMISIHWKGPLRLQQAYLIMISALMALVFIKY
                                                                                                                                                             MTELPAPLSYFQNAQMSEDNHLSNTVRSQNDNRERQEHNDRRSLGHPEPLSNGRPQGNSR
                                                                                                                                                                                                                                                                                                       type protein.
                                                                                                                                                                                                                                                                             467 AA;
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                                                                                                                                                                                                                    Conservative
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99.8%;
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                                                                                                                                                 A 463-amino acid polypeptide (AAW11840) is the product of a full-length cDNA (AAT59536) of an early onset Alzheimer's disease (EOAD) splice variant gene. A 467-amino acid polypeptide (AAW11839) is the product of a full-length cDNA (AAT59535) of the EOAD gene. The 2 polypeptides can be produced in transformed host cells and used to raise antibodies, or to identify antagonist/inhibitor cpds. useful in the treatment of Alzheimer's disease, esp. EOAD.
                                                                                                                             Sequence
                                                                                                                                                                                                                                                      Disclosure;
                                                                                                                                                                                                                                                                          Early onset Alzheimer's disease gene - pre-disposition to Alzheimer's disease
                                                                                                                                                                                                                                                                                                                WPI; 1997-118980/11.
N-PSDB; AAT59536.
                                                                                                                                                                                                                                                                                                                                                     Hardy JA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                           (UYSF-) UNIV
                                                                                                                                                                                                                                                                                                                                                                                                    18-JUL-1995;
13-JUL-1995;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Early onset Alzheimer's disease; EOAD; neurodegenera diagnosis; therapy; inhibitor; antagonist; antibody.
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                                                                            Local Similarity
nes 437; Conserv
TLCMVVVVATIKSVSFYTRKDGQLIYTPFTEDTETVGQRALHSILNAAIMISVIVVMTIL 149
                                     NDNRERQEHNDRRSLGHPEPLSNGRPQGNSRQVVEQDEEEDEELTLKYGAKHVIMLFVPV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TLLLAIFKKALPALPISITEGLVEYFATDYLVQPEMDQLAFHQEYI 467
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                           NDNRERQEHNDRRSLGHPEPLSNGRPQGNSRQVVEQDEEEDEELTLKYGAKHVIMLFVPV
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                                                                                                                             463
                                                                                                                                                                                                                                                  Fig 2; 44pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Alzheimer's disease
                                                                            Conservative
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95US-0001142
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                                                                         Score 337; DB Pred. No. 0; 0; Mismatches
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                                                                                                                                                                                                                                                                                       useful for diagnosing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     neurodegenerative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           splice variant
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RESULT 16
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                                                                                                                                                                                                                                                                                                                                                                      frameshift mutation; age-related disease; neurodegenerative disorder; Alzheimer's disease; Down's syndrome; myotonic dystrophy; neuronal; Huntington's disease; multiple sclerosis; alcoholic liver disease; diabetes mellitus type II; microtubule associated protein; Tau; Big Tau ubiquitin B; apolipoprotein E; MAP2; neurofilament-L; neurofilament-M; neurofilament-F; presenilin I; presenilin II; cellular tumour antigen; glial fibrillary acidic protein; GFAP; p53; semaphorin III; HUPF-1; glial fibrillary acidic protein; GFAP; p53; semaphorin III; HUPF-1; bcl-2; B-cell leukemia/lymphoma 2 proto-oncogene; HMGP-C; NSP-A; bcl-2; B-cell leukemia/lymphoma 2 proto-oncogene; HMGP-C; NSP-A;
          Diagnosing disease by detecting frameshift mutations in RNA or corresponding protein mutations - used to diagnose cancer and neurological diseases, particularly Alzheimer's disease, and a for treatment and prevention with specific ribozymes or wild-t
                                                                                                                                                                        (UYUT-)
(ROYA-)
                                                                                                                             Burbach
                                                                                                                                                                                                                                             02-APR-1998;
                                                                                                                                                         (UYRO-)
                                                                                                                                                                                                                  10-APR-1997;
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                                                                                                                                                                                                                                                                                                    W09845322\-A2
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                                                                                                                                                                                                                                                                                                                                                           high mobility group protein-C; neuroendocrine specific protein A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human;
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Best Local
Early onset Alzheimer's disease; EOAD; neurodegenerative diagnosis; therapy; inhibitor; antagonist; antibody.
                                           Human early onset Alzheimer's
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an RNA molecule that has a frameshift
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                                                                                                                                                                                                                                                                                                                                                                                                                          A 467-amino acid polypeptide (AAW11839) is the product of a full-length cDNA (AAT59535) of the early onset Alzheimer's diseas. (EOAD) gene. A 463-amino acid polypeptide (AAW11840) is the product of another full-length cDNA (AAT59536) of an EOAD splice variant gene. The 2 polypeptides can be produced in transformed host cells and used to raise antibodies, or to identify antagonist/inhibitor cpds., useful in the treatment of Alzheimer'.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Disclosure; Fig 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Early onset Alzheimer's disease gene - useful for pre-disposition to Alzheimer's disease
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N-PSDB; AAT59535.
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13-JUL-1995;
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                                                      SVLVGKASATASGDWNTTIACFVAILIGLCLTLLLLAIFKKALPALPISITFGLVFYFAT
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AAW41429
-8-8-8-8
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Best Local Similarity
Matches 409; Conserv
                                                                                                                                                                                                                        hybridise with probes are isolated for sequencing. Antibodies (Ab) can also be diagnosed at the protein level using Ab as immunoassay reagents. Ab can also be used to identify epitopes and for affinity purification of peptides. Antisense nucleic acid may also be used to regulate expression of the PSI/429 gene, and both nucleic acids and peptides are useful as size markers in electrophoresis, chromatography etc. The transgenic animals are used as models for Ab, e.g. for testing drugs. Regulators of the PSI/429 gene or polypeptide can be used to treat e.g. Ab or diseases involving mitochondrial pathology, apoptosis and neurodegeneration. Typical regulators are antisense sequences, ribozymes, aptamers, synthetic or natural compounds. (II) may also be used to target other coding sequences to particular cellular locations.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18-JUL-1996;
                                                                                                                                                                                                                                                                                                                                                                                                       This sequence is the PS1/429 presentilin peptide (II) of the invention. Cells transformed with the DNA are used to produce recombinant (II) and analogues, useful e.g. as immunogens for generating an immune response against PS1/429. (II) is a new product of the PS1 gene, mutations in which cause Alzheimer's disease (AD). The nucleic acids are generally useful as probes for detection and quantification of PS1/429, particularly for diagnosis of AD, especially the target sequences that
                                                                                                                                                                                                Sequence
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N-PSDB; AAV17357.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             04-JUN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Presenilin peptide; |
Alzheimer's disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PS1/429 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAW41429;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              encoding presentlin peptide PS1/429 and its analogues - diagnosis and treatment of Alzheimer's disease
                             FTEDTETVGQRALHSILNAAIMISVIVVMTILLVVLYKYRCYKVIHAWLIISSLLLLFFF
                                                                                         NSRQVVEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTP
               FTEDTETYGQRALHSILNAAIMISVIVVMTILLVVLYKYRCYKVIHAWLIISSLLLLFFF
                                                                        {\tt NSRQVVEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTP}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24; Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'n,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     standard;
                                                                                                                                                                                                429
                                                                                                                                      Conservative
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                                                                                                                                                                                                ĀΑ;
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96US-0659296
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ,NL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PS1/429; immunogen; immune response; PS1 gen mitochondrial pathology; neurodegeneration;
                                                                                                                                                 66.2%;
99.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Drache
                                                                                                                                     0;
                                                                                                                                                 Score 309; DB 19;
Pred. No. 1.6e-296;
                                                                                                                                     Mismatches
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                                                                                                                                                               Length 429;
                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PS1 gene;
                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      recombinant
                                                                                                                                   Gaps
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RESULT 19
AAW05759
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                                                                                                                                                                                                                                                          31-JUL-1995;
28-APR-1995;
28-JUN-1995;
                                                     AAW05736-W05760 represent mutated versions of the human presenilin-1-1 protein (see AAW05733 for wild type sequence). AAW05734 represents a different wild type form of presenilin-1 that results from alternate splicing of the genomic DNA sequence. The presenilins are a family of
                                                                                                                                                                                                                        (HSCR-)
                                                                                                                 Claim 3; Page -; 178pp; English.
                                                                                                                                       New presentilin genes - useful for screening of familial Alzheimer's
                                                                                                                                                                            WPI; 1996-497631/49.
                                                                                                                                                                                                  Fraser PE,
                                                                                                                                                                                                                                                                                                         29-APR-1996;
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                                                                                                                                                                                                                                                                                                                                                                                        Key
Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                            Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                  depression;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Presenilin-1; human; hPS1-1; hPS1-2; PS-2; integral membrane protein; familial Alzheimer's disease; cerebral haemorrhage; schizophrenia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Presenilin-1-1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LCLTLLLLAIFKKALPALPISITFGLVFYFATDYLVQPFMDQLAFHQFYI 429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RAAVQELSSSILAGEDPEERGVKLGLGDFIFYSVLVGKASATASGDWNTTIACFVAILIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       {\tt MAEGDPEAQRRVSKNSKYNAESTERESQDTVAENDDGGFSEEWEAQRDSHLGPHRSTPES}
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                                                                                                                                                                                                                         HSC R
                                                                                                                                                                                                                     RES & DEV LP.
V TORONTO GOVERNING COUNCIL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                antibody;
                                                                                                                                                                                                  Rommens JM,
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95US-0431048.
95US-0496841.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mutation.
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                                                                                                                                        diagnosis, therapy and drug disease, cerebral disorders,
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motif, common alternate splicing patterns, and common mutational hot spot regions. Mutations in PS genes are implicated in familial Alzheimer's disease (AD) and possibly other diseases such as cerebra.

of mutations

'n

cerebral

highly conserved integral membrane proteins with a common structural motif, common alternate splicing patterns, and common mutational hot

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RESULT 20
AAW28507
ID AAW28
XX AAW28
XX AAW28
XX AAW28
CT 07-DE
XX AAW3
CT 07-DE
XX AAW3
CT 07-DE
XX AAW3
CT 07-DE
CT 07-DE
CT M1SC-
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Best Local Sim
Matches 408;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              these diseases. The wild type proteins, or vectors that express them containing antisense sequences, antibodies selective for these mutant forms of the proteins and modulators of PS gene expression are potentially useful for treatment of AD etc. Transgenic animals are useful as models for drug screening. The antibodies can also be used for affinity purification and in immunoassays.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
              Misc-difference
                                                  Misc-difference
                                                                                                                                                                                                                              presenilin;
                                                                                                                                                                                                                                                                    Partial AD3
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                                                                                                                                                                                                                                                                                                                       AAW28507;
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                                                                                       Misc-difference
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                                                                                                                                                                                                                                            AD4/AD3LP;
                                                                                                                                                                                                                                                                                                                                                                                                              VQELSSSILAGEDPEERGVKLGLGDFIFYSVLVGKASATASGDWNTTIA 409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             YLGEVFKTYNVAVDYITVALLIWNLGVVGMISIHWKGPLRLQQAYLIMISALMALVFIKY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QVVEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTPFTE
                                                                                                                                                                                                     sapiens
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                                                                                                                                                                                                                                                                                                                                               standard;
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                                                                                                                                                                                                                              3LP; Alzheimer's disease;
inhibitor; AD; trisomy 2
                                                                                                                                                                                                                                                                    sequence
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                                                                                                                                                                Location/Qualifiers 86
                                                                                        186
              350
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                         /note=
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 /label=
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99.8%;
                                                                                                   mutation "H -> R"
                         mutation
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"A -> E"
mutation
                                                                                                                                                     mutation
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No. 1.7e-295;
                                                                                                                                                                                                                                            chromosome;
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RESULT 21 AAW05758

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AAW05758 AAW05758,

standard; Protein;

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Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                    screening for inhibitors of chromosome missegregation and processed by genes encoding chromosome missegregation promoters was exemplified using Alzheimer's disease. The sequences given in AAT87401 to AAT87426 can be used in the above methods. The five mutations indicated in the Features Table cosegregate with early-onset familial Alzheimer's disease. It is predicted that these mutations result in increased levels of cells with trisomy 21 in carriers of the mutation compared with non-carriers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Identifying genes which cause chromosome identifying causes of and treatments for disease, cancer and ageing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 1997-165297/15
N-PSDB; AAT87402.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Disclosure; Fig 1; 77pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Identifying genes which cause improper chromosome segregation,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (HARD ) HARVARD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16-AUG-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15-AUG-1996;
361
                       421
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                                                                                                                                                                                                                                                                                                             61 QVVEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTPFTE
                                                                                                                                                                                                                                                                                                '1 QVVEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTPFTE
          TLLLLAIFKKALPALPISITFGLVFYFATDYLVQPFMDQLAFHQFYI
                                             LPEWTAWLILAVISVYDLVAVLCPKGPLRMLVETAQERNETLFPALIYSSTMVWLVNMAE
                                                                                                                                                                                                           YLGEVFKTYNVAVDYITVALLIWNLGVVGMISIHWKGPLRLQQAYLIMISALMALVFIKY
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TLLLLAIFKKALPALPISITFGLVFYFATDYLVQPFMDQLAFHQFYI
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                                                                                                                                                                                                                                                                                                                                              Score 306; DB Pred. No. 1.4e 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                           DB 18;
L.4e-293;
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diseases, e.g. Alzheimer'
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                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 390
                                                                                                                                                                                                                                                                                                                                                                                            Sequence
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28-APR-19\95;
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                                                                                                                                       YLGEVFKTYNVAVDYITVALLIWNLGVVGMISIHWKGPLRLQQAYLIMISALMALVFIKY
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                                                                                                                                                                                                                                                MTELPAPLSYFQNAQMSEDNHLSNTVRSQNDNRERQEHNDRRSLGHPEPLSNGRPQGNSR 60
                                                                                                                                                                                                                          MTELPAPLSYFQNAQMSEDNHLSNTVRSQNDNRERQEHNDRRSLGHPEPLSNGRPQGNSR
                                                                                                                                                                                                                                                                                                                                  Similarity
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V TORONTO GOVERNING
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95US-0431048.
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Pred. No. 1e-277;
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RESULT 22
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spot regions. Mutations in PS genes are implicated in familial Alzhelmer's disease (AD) and possibly other diseases such as carebral haemorrhage, schizophrenia, depression etc., so detection of mutations the DNA encoding the wild type sequences can be used for diagnosis of these diseases. The wild type proteins, or vectors that express them or containing antisense sequences, antibodies selective for these mutant forms of the proteins and modulators of PS gene expression are potentially useful for treatment of AD etc. Transgenic animals are
                                                                                                                                                                                                                                                                                                                                                                               31-JUL-1995;
28-APR-1995;
28-JUN-1995;
                                                                                                                        AAW05736-W05760 represent mutated versions of the human presenilin-1-1 protein (see AAW05733 for wild type sequence). AAW05734 represents a different wild type form of presenilin-1 that results from alternate splicing of the genomic DNA sequence. The presenilins are a family of highly conserved integral membrane proteins with a common structural
                                                                                                                                                                                                                                                                                                                                      (HSCR-)
                                                                                                             motif, common alternate splicing patterns, and common mutational hot
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28-JUN-1995;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TERESQDTVAENDDGGFSEEWEAQRDSHLGPHRSTPESRAAVQELSSSILAGEDPEERGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AVLCPKGPLRMLVETAQERNETLFPALIYSSTMVWLVNMAEGDPEAQRRVSKNSKYNAES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LLIWNFGVVGMISIHWKGPLRLQQAYLIMISALMALVFIKYLPEWTAWLILAVISVYDLV
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                                                                                                                       HSC
                                                                                           VINU
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                                                                               RES & DEV LP.
V TORONTO GOVERNING COUNCIL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                 Rommens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                             95US-0509359.
95US-0431048.
95US-0496841.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AA;
                                                                                                                                                                                                                                                                                                 96WO-CA00263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /label=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mutation
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99.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             screening. The antibodies and in immunoassays.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 287; DB
Pred. No. 9.5e
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                 George-Hyslop
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ã
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.5e-275;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein;
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ARESULT 24
AARE17046
ID AAE17
XX AAE17
AC AAE17
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XX 18-AF
DT 18-AF
CX AAE17
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AX AAE17

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Local

Similarity

60.8%; 99.7%;

Length

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cc different wild type form of presentian 1 that results from alternate splicing of the genomic DNA sequence. The presentlins are a family of the genomic DNA sequence. The presentlins are a family of conserved integral membrane proteins with a common structural comotif, common alternate splicing patterns, and common mutational hot spot regions. Mutations in PS genes are implicated in familial common familial common structural common structural common structural common structural common structural common structural common familial common
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New presentiin genes - useful for diagnosis, therapy and drug screening of familial Alzheimer's disease, cerebral disorders,
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAW05736-W05760 represent mutated versions of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3; Page -; 178pp; English
467
AA;
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Matches
 18-APR-2002
                                           AAE17046 standard; Protein;
                      AAE17046;
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                                                                                                                                         ESQDTVAENDDGGFSEEWEAQRDSHLGPHRSTPESRAAVQELSSSILAGEDPEERGVKLG
                                                                                                                                                                                                                                          CPKGPLRMLVETAQERNETLFPALIYSSTMVWLVNMAEGDPEAQRRVSKNSKYNAESTER
                                                                                                                                                                                                                                                                                     WNLGVVGMISIHWKGPLRLQQAYLIMISALMALVFIKYLPEWTAWLILAVISVYDLVAVL
                                                                                                                                                                                                                                                                                                                   LVFYFATDYLVQPFMDQLAFHQFYI
                                                                                                                                                                                                                                CPKGPLRMLVETAQERNETLFPALIYSSTMVWLVNMAEGDPEAQRRVSKNSKYNAESTER
                                                                                                                                                                                                                                                                         WNFGVVGMISIHWKGPLRLQQAYLIMISALMALVFIKYLPEWTAWLILAVISVYDLVAVL
                                                                                                                                                                                     ESQDTVAENDDGGFSEEWEAQRDSHLGPHRSTPESRAAVQELSSSILAGEDPEERGVKLG
                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
entry)
                                            467
                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                        Score 284; DB 17;
Pred. No. 8.8e-272;
0; Mismatches 1;
                                                                                                                    467
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                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
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Human; presenilin 1; P Alzheimer's disease; P Huntington's disease; head injury disease; f

PS1; amyloid precursor protein; APP; drug scree Parkinson's disease; multiple sclerosis; stroke; amylotrophic lateral sclerosis; Picks disease; frontal lobe dementia; cerebellar degeneration;

mutant

presenilin 1 (PS1)

protein

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Query Match
                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein processing, such as Alzheimer's disease, Parkinson's disease, multiple sclerosis, Huntington's disease, amylotrophic lateral sclerosis, head injury disease, Picks disease, frontal lobe dementia, cerebellar degeneration, stroke, ischaemic injury and schizophrenia. A transgenic
                                                                                                                                                                                                                                                                                                                                                                                             animal is useful for analysing the interaction between APP and mutant presentlin-processing protease in vivo, and for screening anti-
Alzheimer's disease drugs in vivo. The present sequence is human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 non-human animal is useful for analysing the interaction between mutant presentlin-processing protease in vivo, and for screening Alzheimer's disease drugs in vivo. A transgenic non-human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               modulate amyloid beta-peptide (Abeta) derived peptide production. Mutant presentilin is also useful as a target for screening drugs useful in the treatment of pathologies associated with aberrant amyloid precursor
                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 15; Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           useful for screening of dru
aberrant amyloid precursor
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cleaved. Mutant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Carter DB,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (PHAA ) PHARMACIA & UPJOHN CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200202601-A2
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  121
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                                                  61
                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   invention relates to mutant presentlin 1 (PS1) and presentlin 2 2) polypeptides. Presentlin are involved in the processing of amy cursor protein (APP) from which major amylodogenic peptides are aved. Mutant presentlins are useful for identifying agents that
                                                                                                                                     MTELPAPLSYFQNAQMSEDNHLSNTVRSQNDNRERQEHNDRRSLGHPEPLSNGRPQGNSR 60
DTETVGQRALHSILNAAIMISVIVVMTILLVVLYKYRCYKVIHAWLIISSLLLLFFFSFI 180
                                           isolated mutant presentilin 1 and presentilin 2 polypeptides, 1 for screening of drugs for treating pathologies associated with anyloid precursor protein processing, such as Alzheimer's
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2002-140082/18.
                                                                                                                                                                                                                                                          Similarity
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                                                                                                                                                                                                                                      Conservative
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386
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by NNN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          by NNN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /label= Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             note= "Wild type Phe substituted with Xaa; Encoded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ′label= Unknown
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                                                                                                                                                                                                                                                          60.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         80pp; English.
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                                                                                                                                                                                                                                    Score 284; DB 23;
Pred. No. 8.8e-272;
); Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ile substituted with Xaa;
                                                                                                                                                                                                                                                                               Length 467;
                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                    0;
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RESULT 25
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        highly conserved integral membrane proteins with a common structural motif, common alternate splicing patterns, and common mutational hot spot regions. Mutations in PS genes are implicated in familial Alzheimer's disease (AD) and possibly other diseases such as cerebral haemorrhage, schizophrenia, depression etc., so detection of mutations the DNA encoding the wild type sequences can be used for diagnosis of
                                                                                    AAW05736-W05760 represent mutated versions of the human presenilin-1-1 protein (see AAW05733 for wild type sequence). AAW05734 represents a different wild type form of presenilin-1 that results from alternate splicing of the genomic DNA sequence. The presenilins are a family of
                                                                                                                                                                                                                                                                             (HSCR-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Presenilin-1; human; hPS1-1; hPS1-2; PS-2; integral membrane protein; familial Alzheimer's disease; cerebral haemorrhage; schizophrenia; depression; antibody; gene expression modulator; therapy; mutein.
 these diseases.
                                                                                                                                                                                                New presenilin
                                                                                                                                                                                                                           WPI; 1996-497631/49.
                                                                                                                                                                                                                                                                                                                                  31-JUL-1995;
28-APR-1995;
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                                                                                                                                                                                                                                                                                                                     28-JUN-1995;
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                                                                                                                                                                                   of familial Alzheimer's
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95US-0431048.
95US-0496841.
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                                                                                                                                                                                                                                                    M,
                                                                                                                                                                                useful for diagnosis, therapy and drug
Alzheimer's disease, cerebral disorders,
                                                                                                                                                        English.
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Best Loc
Matches
                                               31-JUL-1995;
28-APR-1995;
28-JUN-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             containing antisense sequences, antibodies selective for these mutant forms of the proteins and modulators of PS gene expression are potentially useful for treatment of AD etc. Transgenic animals are useful as models for drug screening. The antibodies can also be used for affinity purification and in immunoassays.
                                                                                                                                                                                                                                                                                               Presenilin-1; human; hPS1-1; hPS1-2; PS-2; integral membrane protein; familial Alzheimer's disease; cerebral haemorrhage; schizophrenia; depression; antibody; gene expression modulator; therapy; mutein.
                                                                                                                                              31-OCT-1996
                                                                                                                                                                           W09634099-A2
                                                                                                                                                                                                                         Modified-site
                                                                                                                                                                                                                                                                                                                                                                  Presenilin-1-1 V96F mutation.
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 (HSCR-) HSC RES & DEV LP.
(UTOR ) UNIV TORONTO GOVERNING
                                                                                                                29-APR-1996;
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382; Conserv
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                                               95US-0431048.
95US-0436841.
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    COUNCIL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Å
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No. 8.4e-270;
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                                Presenilin-1-1 C263R
                                                                                              AAW05750;
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                                                                                                                            standard;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 467 AA;
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                                                              (first
human; hPS1-1; hPS1-2; PS-2; integral membrane protein;
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99.7%;
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Pred. No. 6.1e-258;
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Indels

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Gaps

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CC AAW05736-W05760 represent mutated versions of the human presenilin-1-1 protein (see AAW05733 for wild type sequence). AAW05734 represents a CC different wild type form of presentlin-1 that results from alternate cC splicing of the genomic DNA sequence. The presentlins are a family of motif, common alternate splicing patterns, and common mutational hot spot regions. Mutations in PS genes are implicated in familial CC Alzheimer's disease (AD) and possibly other diseases such as cerebral CC haemorrhage, schizophrenia, depression etc., so detection of mutations in CC the DNA encoding the wild type proteins, or vectors that express them or CC containing antisense sequences, antibodies selective for these mutant CC forms of the proteins and modulators of PS gene expression are CC useful as models for drug screening. The antibodies can also be used e.g. Cxx
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CC | AAW05736-W05760 represent mutated versions of the human presenilin-1-1 crowding type form of presenilin-1 that results from alternate CC different wild type form of presenilin-1 that results from alternate CC splicing of the genomic DNA sequence. The presenilins are a family of motif, common alternate splicing patterns, and common mutational hot CC spot regions. Mutations in PS genes are implicated in familial CC haemorrhage, schizophrenia, depression etc., so detection of mutations in CC haemorrhage, schizophrenia, depression etc., so detection of mutations in CC the DNA encoding the wild type sequences can be used for diagnosis of the sed diseases. The wild type proteins, or vectors that express them or CC containing antisense sequences, antibodies selective for these mutant CC forms of the proteins and modulators of PS gene expression are useful as models for drug screening. The antibodies can also be used e.g. for affinity purification and in immunoassays.
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                     241 LPEWTAWLILAVISVYDLVAVLCPKGPLRMLVETAQERNETLFPALIYSSTMYWLVNMAE
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UNIV TORONTO GOVERNING COUNCIL.
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99.6%;
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       motif, common alternate splicing patterns, and common mutational hot spot regions. Mutations in PS genes are implicated in familial Alzheimer's disease (AD) and possibly other diseases such as cerebral haemorrhage, schizophrenia, depression etc., so detection of mutations the DNA encoding the wild type sequences can be used for diagnosis of these diseases. The wild type proteins, or vectors that express them or containing antisense sequences, antibodies selective for these mutant forms of the proteins and modulators of PS gene expression are potentially useful for treatment of AD etc. Transgenic animals are useful as models for drug screening. The antibodies can also be used enfor affinity purification and in immunoassays.
                                                                                                                                                                AAW05736-W05760 represent mutated versions of the human presenilin-1-1 protein (see AAW05733 for wild type sequence). AAW05734 represents a different wild type form of presenilin-1 that results from alternate splicing of the genomic DNA sequence. The presenilins are a family of highly conserved integral membrane proteins with a common structural
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28-APR-1995;
28-JUN-1995;
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...+-hes 465; Conservative
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Presenilin-1-1 E280A/G mutation

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(first entry)

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28-JUN-1995;
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eening of familial Alzheimer'
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                                    highly conserved integral membrane proteins with a common structural motif, common alternate splicing patterns, and common mutational hot spot regions. Mutations in PS genes are implicated in familial Alzheimer's disease (AD) and possibly other diseases such as cerebral haemorrhage, schizophrenia, depression etc., so detection of mutations the DNA encoding the wild type sequences can be used for diagnosis of these diseases. The wild type proteins, or vectors that express them or
                                                                                                                         AAW05736-W05760 represent mutated versions of the human presenilin-1-1 protein (see AAW05733 for wild type sequence). AAW05734 represents a different wild type form of presenilin-1 that results from alternate splicing of the genomic DNA sequence. The presenilins are a family of highly conserved integral membrane proteins with a common structural
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             containing antisense sequences, antibodies selective for these mutant forms of the proteins and modulators of PS gene expression are
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28-JUN-1995;
  (HSCR-) HSC
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                                                                                                                                                                                           WO9634099-A2
                                                                                                                                                                                                                                                                                                                                                   depression; antibody;
                                                                                                                                                                                                                                                                                                                                                                                                                               Presenilin-1-1 L286V mutation
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                                                                                                                   29-APR-1996;
                                                                                                                                                                                                                                                    Modified-site
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                                                                                                                                                                                                                                                                                                                                                 Presenilin-1; human; hPS1-1; hPS1-2; PS-2; integral membrane protein; familial Alzheimer's disease; cerebral haemorrhage; schizophrenia; depression; antibody; gene expression modulator; therapy; mutein.
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CC AAW05736-W05760 represent mutated versions of the human presenilin-1-1 CC protein (see AAW05733 for wild type sequence). AAW05734 represents a CC different wild type form of presenilin-1 that results from alternate CC splicing of the genomic DNA sequence. The presenilins are a family of the highly conserved integral membrane proteins with a common structural CC motif, common alternate splicing patterns, and common mutational hot spot regions. Mutations in PS genes are implicated in familial CC Alzheimer's disease (AD) and possibly other diseases such as cerebral CC hammorrhage, schizophrenia, depression etc., so detection of mutations in CC the DNA encoding the wild type sequences can be used for diagnosis of these diseases. The wild type proteins, or vectors that express them or CC containing antisense sequences, antibodies selective for these mutant CC forms of the proteins and modulators of PS gene expression are CC useful as models for drug screening. The antibodies can also be used e.g. CC useful as models for drug screening. The antibodies can also be used e.g.
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TLLLLAIFKKALPALPISITFGLVFYFATDYLVQPFMDQLAFHQFYI 467
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Pred. No. 5.3e-253;
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28-APR-1995;
28-JUN-1995;
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                                                                                                                                                                                                                                                                                                                                                                                                  Claim 3;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Presenilin-1-1 Y115H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           23-JUL-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29-APR-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         31-OCT-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Presenilin-1; human; hPS1-1; hPS1-2; PS-2; familial Alzheimer's disease; cerebral haem
                                 121
          181 YLGEVFKTYNVAVDYITVALLIWNLGVVGMISIHWKGPLRLQQAYLIMISALMALVFIKY
                                                     121
                                                                         61
                                                                                             61
                                                                                                                                                                    Local Similarity
                                                                                                                                       μ
                               QVVEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTPFTE
                                                                                                                           MTELPAPLSYFQNAQMSEDNHLSNTVRSQNDNRERQEHNDRRSLGHPEPLSNGRPQGNSR
                                                                        QVVEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIHTPFTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                      1996-497631/49
                                                                                                                {\tt MTELPAPLSYFQNAQMSEDNHLSNTVRSQNDNRERQEHNDRRSLGHPEPLSNGRPQGNSR}
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VIND
                                                                                                                                                                                                                                                                                                                                                                                                 Page -; 178pp; English.
                                                                                                                                                                                                  467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RES & DEV LP.
V TORONTO GOVERNING COUNCIL.
                                                                                                                                                          Conservative
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95US-0431048.
95US-0496841.
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                                                                                                                                                                   56.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mutation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene expression modulator; therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        St George-Hyslop
                                                                                                                                                          0;
                                                                                                                                                                   Score 265; DB 17;
Pred. No. 5.3e-253;
                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S-2; integral membrane protein;
haemorrhage; schizophrenia;
                                                                                                                                                                            Length 467;
                                                                                                                                                         Indels
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RESULT 34
AAW05740
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28-APR-1995;
28-JUN-1995;
spot regions. Mutations in PS genes are implicated in familial Alzheimer's disease (AD) and possibly other diseases such as cerebral haemorrhage, schizophrenia, depression etc., so detection of mutations the DNA encoding the wild type sequences can be used for diagnosis of
                                                                                    AAW05736-W05760 represent mutated versions of the human presenilin-1-1 protein (see AAW05733 for wild type sequence). AAW05734 represents a different wild type form of presenilin-1 that results from alternate splicing of the genomic DNA sequence. The presenilins are a family of highly conserved integral membrane proteins with a common structural motif, common alternate splicing patterns, and common mutational hot
                                                                                                                                                                                                                                                                                               New presentiin screening of fa
                                                                                                                                                                                                                                                       Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Presenilin-1; human; hPS1-1; hPS1-2; PS-2; integral membrane prote familial Alzheimer's disease; cerebral haemorrhage; schizophrenia; depression; antibody; gene expression modulator; therapy; mutein.
                                                                                                                                                                                                                                                                                                                                                                                                                   Fraser
                                                                                                                                                                                                                                                                                                                                                                                                                                                           (HSCR-)
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/ TORONTO GOVERNING
                                                                                                                                                                                                                                                                                                                                                                                                                 Rommens JM,
                                                                                                                                                                                                                                                                                                  in genes - useful for familial Alzheimer's
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28-APR-1995;
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                                                                                                                                            WO9634099-A2
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                                                              29-APR-1996;
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Best Local
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465; Conservative
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and in immunoassays.
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AAW05736-W05760 represent mutated versions of the human presenilin-1-protein (see AAW05733 for wild type sequence). AAW05734 represents a different wild type form of presenilin-1 that results from alternate splicing of the genomic DNA sequence. The presenilins are a family of highly conserved integral membrane proteins with a common structural motif, common alternate splicing patterns, and common mutational hot spot regions. Mutations in PS genes are implicated in familial
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28-APR-1995;
28-JUN-1995;
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screening of familial Alzheimer'
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                                                                                                                                                                                              Presenilin-1; human; hPS1-1; hPS1-2; PS-2; integral membrane profamilial Alzheimer's disease; cerebral haemorrhage; schizophren: depression; antibody; gene expression modulator; therapy; muteir
                                                                                                                                                                                                                                                                                                                                                                                   AAW05744 standard;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        nilin genes - useful for diagnosis, therapy and drug of familial Alzheimer's disease, cerebral disorders,
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28-APR-1995;
28-JUN-1995;
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                                                                                                                                   PE,
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UNIV TORONTO GOVERNING COUNCIL.
                                                           Page -;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            standard;
                                                                                                                                   Rommens
                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                     95US-0509359.
95US-0431048.
95US-0496841.
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                                                                                                                                                                                                                                                                                                     Location/Qualifiers 211
                                                          178pp; English
                                                                                                                                                                                                                                                                                          /label=
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Protein; 467
                                                                                                                                   ,ML
                                                                                useful for diagnosis, therapy and drug Alzheimer's disease, cerebral disorders,
                                                                                                                                   t2
                                                                                                                                  George-Hyslop
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AAW05736-W05760 represent mutated versions of the human presenilin-1-1 protein (see AAW05733 for wild type sequence). AAW05734 represents a different wild type form of presenilin-1 that results from alternate splicing of the genomic DNA sequence. The presenilins are a family of

integral membrane proteins

with a

a family of structural

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RESULT 41
AAW05747
ID AAW057
XX AAW05
AC AAW05
XX 23-JU
DT 23-JU
XX Prese
KW Prese
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OS Homo
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Best Local
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                                                                                                                         depression;
                                                                                                                                                    Presenilin-1;
                                                                                                                                                                                Presentlin-1-1 I231T mutation.
                                                                                                                                                                                                            23-JUL-1997
                                                                                                                                                                                                                                                                  AAW05747 standard;
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               WO9634099-A2
                                                      Modified-site
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                                                                                               sapiens
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                                                                                                                         antibody;
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                                                                                                                                                    human;
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                                                        Location/Qualifiers 231
                                         /label=
                                                                                                                                                                                                                                                                  Protein;
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99.6%;
                                                                                                                                       hPS1-1; hPS1-2; PS-2; integral membrane protein; disease; cerebral haemorrhage; schizophrenia;
                                                                                                                         gene
                                                                                                                         expression modulator; therapy;
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.3e-253;
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CC AAW05736-W05760 represent mutated versions of the human presenilin-1-1 CC protein (see AAW05733 for wild type sequence). AAW05734 represents a CC different wild type form of presenilin-1 that results from alternate CC splicing of the genomic DNA sequence. The presenilins are a family of the figure of the genomic DNA sequence. The presentlins are a family of the figure of the genomic DNA sequence. The presentlins are a family of CC motif, common alternate splicing patterns, and common mutational hot CC spot regions. Mutations in PS genes are implicated in familial CC Alzheimer's disease (AD) and possibly other diseases such as cerebral CC haemorrhage, schizophrenia, depression etc., so detection of mutations in CC the DNA encoding the wild type sequences can be used for diagnosis of CC these diseases. The wild type proteins, or vectors that express them or CC containing antisense sequences, antibodies selective for these mutant CC forms of the proteins and modulators of PS gene expression are CC usefil as models for drug screening. The antibodies can also be used e.g.
     Query Match
Best Local :
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28-APR-1995;
28-JUN-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                   New presentilin genes - useful for diagnosts, therapy and drug screening of familial Alzheimer's disease, cerebral disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (HSCR-)
                                                                                                                                                                                                                                                                                                                                                                                  Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Fraser
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                                                       Sequence
                                                                                        for affinity purification
                                                                                                                                                                                                                                                                                                                                                                                 3; Page -; 178pp; English.
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     Similarity
                                                         467
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95US-0431048.
95US-0496841.
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   56.7%;
99.6%;
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                                                                                        and in immunoassays.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       George-Hyslop
Score 265; DB 17;
Pred. No. 5.3e-253;
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                   Length 467;
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Qy δõ Qy B Qy 밁 δÃ В δÃ 밁 В DЬ δÃ 밁 Matches 421 361 301 301 241 241 181 181 121 121 61 61 1 MTELPAPLSYFQNAQMSEDNHLSNTVRSQNDNRERQEHNDRRSLGHPEPLSNGRPQGNSR 1 MTELPAPLSYFQNAQMSEDNHLSNTVRSQNDNRERQEHNDRRSLGHPEPLSNGRPQGNSR TLLLLAIFKKALPALPISITFGLVFYFATDYLVQPFMDQLAFHQFYI DTETYGQRALHSILNAAIMISVIVVMTILLVVLYKYRCYKVIHAWLIISSLLLLFFFSFI QVVEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTPFTE GDPEAQRRVSKNSKYNAESTERESQDTVAENDDGGFSEEWEAQRDSHLGPHRSTPESRAA QVVEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTPFTE VQELSSSILAGEDPEERGVKLGLGDFIFYSVLVGKASATASGDWNTTIACFVAILIGLCL VQELSSSILAGEDPEERGVKLGLGDFIFYSVLVGKASATASGDWNTTIACFVAILIGLCL **GDPEAQRRVSKNSKYNAESTERESQDTVAENDDGGFSEEWEAQRDSHLGPHRSTPESRAA** LPEWTAWLILAVISVYDLVAVLCPKGPLRMLVETAQERNETLFPALIYSSTMVWLVNMAE DTETVGQRALHSILNAAIMISVIVVMTILLVVLYKYRCYKVIHAWLIISSLLLLFFFSFI 465; Conservative 0 Mismatches Indels 0 Gaps 420 360 360 300 300 240 240 180 180 120 120 60 60

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421

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AAW05748
ID |AAW05
                                                                       |Matches 465;
                                                                                            Query Match
                                                                                                                                                                                                                           AAW05736-W05760 represent mutated versions of the human presenilin-1-1 protein (see AAW05733 for wild type sequence). AAW05734 represents a different wild type form of presenilin-1 that results from alternate splicing of the genomic DNA sequence. The presenilins are a family of highly conserved integral membrane proteins with a common structural motif, common alternate splicing patterns, and common mutational hot spot regions. Mutations in PS genes are implicated in familial Alzheimer's disease (AD) and possibly other disease such as cerebral
                                                                                                                                                                       haemorrhage, schizophrenia, depression etc., so detection of mutations the DNA encoding the wild type sequences can be used for diagnosis of these diseases. The wild type proteins, or vectors that express them or containing antisense sequences, antibodies selective for these mutant forms of the proteins and modulators of PS gene expression are
                                                                                                                   Sequence
                                                                                                                                                  potentially useful for treatment of AD etc. Transger useful as models for drug screening. The antibodies
                                                                                                                                                                                                                                                                                                                                                        New presentlin genes - useful for diagnosis, therapy and drug screening of familial Alzheimer's disease, cerebral disorders,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Presentlin-1; human; hPS1-1; hPS1-2; PS-2; integral membrane protein; familial Alzheimer's disease; cerebral haemorrhage; schizophrenia; depression; antibody; gene expression modulator; therapy; mutein.
                                                                                                                                                                                                                                                                                                                                      Claim 3;
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28-APR-1995;
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   61
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                                                                                 Local
                                                                                                                                      ful as models for drug screening.
                                    MTELPAPLSYFQNAQMSEDNHLSNTVRSQNDNRERQEHNDRRSLGHPEPLSNGRPQGNSR 60
QVVEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTPFTE 120
                      {\tt MTELPAPLSYFQNAQMSEDNHLSNTVRSQNDNRERQEHNDRRSLGHPEPLSNGRPQGNSR}
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                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                     Page -; 178pp;
                                                                                                                   467 AA;
                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                  Rommens JM,
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95US-0431048.
95US-0496841.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /label= A246E
                                                                              56.7%;
99.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                St George-Hyslop
                                                                    0;
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                                                                  Score 265; DB 17;
Pred. No. 5.3e-253;
0; Mismatches 2;
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                                                                                                                                       immunoassays.
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    gene expression are
    Transgenic animals are

                                                                                          Length 467;
                                                                    Indels
                                                                                                                                                   can also be used
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RESULT 43
AAW05749
                                                                                                                        (HSCR-)
Claim 3; Page -; 178pp; English.
                         New presentilin genes - useful for diagnosis, therapy and drug screening of familial Alzheimer's disease, cerebral disorders,
                                                                                             Fraser PE,
                                                                                                                                                                                                                                                                                                                                                                            depression; antibody; gene expression modulator; therapy; mutein
                                                                                                                                                                                                                                                                                                                                                                                       Presenilin-1; human; hPS1-1; hPS1-2; PS-2; integral membrane protein; familial Alzheimer's disease; cerebral haemorrhage; schizophrenia;
                                                                                                                                                                28-JUN-1995;
                                                                                                                                                                           31-JUL-1995;
28-APR-1995;
                                                                                                                                                                                                                  29-APR-1996;
                                                                                                                                                                                                                                              31-OCT-1996
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                                                                                                                                                                                                                                                                                                             Modified-site
                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                  Presenilin-1-1 A260V mutation.
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                                                                                                                   RES & DEV LP.
V TORONTO GOVERNING COUNCIL.
                                                                                             Rommens JM,
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95US-0431048.
95US-0496841.
                                                                                                                                                                                                                  96WO-CA00263
                                                                                                                                                                                                                                                                                                             Location/Qualifiers 260
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AAW05736-W05760 represent mutated versions of the human presenilin-1-1 protein (see AAW05733 for wild type sequence). AAW05734 represents a different wild type form of presenilin-1 that results from alternate

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RESULT 44
AAW27176
ID AAW27
XX AAW27
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                          03-SEP-1996;
                                                                            06-MAR-1997
                                                                                                                            WO9708319-A1
                                                                                                                                                                                                                              Mutant; antisense;
                                                                                                                                                                                                                                                                                Human S182 gene,
                                                                                                                                                                                                                                                                                                                                     09-DEC-1997
                                                                                                                                                                                                                                                                                                                                                                                     AAW27176;
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Pred. No. 5.3e-253;
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Mutant PS1 produces a gene product that increases the probability of Alzheimer's disease. A nucleic acid sequence able to hybridise to sequences coding for a mutant PS1 polypeptide can be used as probes for diagnosing an increased likelihood of contracting Alzheimer's disease. Antibodies against the mutant polypeptide can also be used for this purpose. Vectors containing or expressing a nucleic acid molecule, purpose. Vectors containing or expressing a nucleic acid molecule, purpose. Vectors containing or expressing a nucleic acid molecule, or or antibody specific for mutant PS1 can be administered to a patient to reduce the likelihood, or delay the onset, of Alzheimer's disease, e.g. anti-sense RNA expression can be used to decrease expression of the PS1 peptide. Transgenic animals expressing the C Alzheimer's disease protein can be used to test candidate therapeutics and to investigate the normal role of PS1. The PS1 peptide may also be included in pharmaceutical compositions (vaccines) for Alzheimer's
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches 465;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
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31-AUG-1995;
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                                                                                                                                           GDPEAQRRVSKNSKYNAESTERESQDTVAENDDGGFSEEWEAQRDSHLGPHRSTPESRAA
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                           TLLLLAIFKKALPALPISITEGLVFYFATDYLVQPFMDQLAFHQFYI 467
                                                                                                                          GDPEAQRRVSKNSKHNAESTERESQDTVAENDDGGFSEEWEAQRDSHLGPHRSTPESRAA
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TLLLLAIFKKALPALPISITFGLVFYFATDYLVQPFMDQLAFHQFYI
                                                            VQELSSSILAGEDPEERGVKLGLGDFIFYSVLVGKASATASGDWNTTIACFVAILIGLCL
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95US-0003054
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99.6%;
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.3e-253;
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ID AAW5
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Livi GP,
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06-SEP-1996;
25-OCT-1996;
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                                                                                                                                                                                                                                                                                                                                                                                Example 1; Page
                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                            The
                                                                                                                                                                                                                                                                                                                                                                                                  Nucleic acids encoding human serum protease protein(s) - used diagnosing pre-disposition to Alzheimer's disease, etc.
                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 1998-161101/15
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          361 VQELSSSILAGEDPEERGVKLGLGDFIFYSVLVGKASATASGDWNTTIACFVAILIGLCL
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                             GDPEAQRRVSKNSKYNAESTERESQDTVAENDDGGFSEEWEAQRDSHLGPHRSTPESRAA
                                                                                 LPEWTAWLILAVISVYDLVAVLCPKGPLRMLVETAQERNETLFPALIYSSTMVWLVNMAE
                                                                                                                           YLGEVFKTYNVAVDYITVALLIWNLGVVGMISIHWKGPLRLQQAYLIMISALMALVFIKY
                                                                                                                                                                                                             QVVEQDEEEDEETTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTPFTE 120
                                                                                                                                                                                                                                                      MTELPAPLSYFQNAQMSEDNHLSNTVRSQNDNRERQEHNDRRSLGHPEPLSNGRPQGNSR
                                                                      LPEWTAWLILAVISVYDLVAVLCPKGPLGMLVETAQERNETLFPALIYSSTMVWLVNMAE
                                                                                                                                                                   DTETVGQRALHSILNAAIMISVIVVMTILLVVLYKYRCYKVIHAWLIISSLLLLEFFSFI
                                                                                                                YLGEVFKTYNVAVDYITVALLIWNFGVVGMISIHWKGPLRLQQAYLIMISALMALVFIKY
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                                                                                                                                                                                                 QVVEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTPFTE
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SMITHKLINE BEECHAM PLC.
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96US-0027873.
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                                                                                                                                                                                                                                                                                             56.7%;
99.6%;
                                                                                                                                                                                                                                                                                                                                                                               65pp; English
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                                                                                                                                                                                                                                                                                  Score 265; DB 19;
Pred. No. 5.3e-253;
D; Mismatches 2;
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                                                                                                                                                                                                                                                                                                       Length 467;
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RESULT 46
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04-JAN-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human; Par-4; presenilin; PS1; neuroprotective; nuclear factor kappa B; NF-kappa B; neuronal degeneration; spinal muscular atrophy; paralysis; peripheral neuropathy; motorneuron disorder; neurodegenerative disorder; Parkinson's disease; Meniere's disease; multiple sclerosis; Bell's palsy; Huntington's chorea; Down's syndrome; amyotrophic lateral sclerosis; ALS; nerve deafness; Alzheimer's disease; epilepsy; mutant; mutein.
                                                                                                                                                                                                                                                                                          (SCIO-) SCIOS INC
                                                                                                                                                                                                                                                                                                                                     08-JAN-2001; 2001WO-US00526
                                                                                                                                                                                                                                                                                                                                                       19-JUL-2001.
                                                                                                                                                                                                                                                                                                                                                                                                Key
Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens.
Synthetic.
                                                                                                                                                                                                                                                                                                                                                                         WO200151671-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human presenilin PS1-FAD mutant M146V
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2001US-0754949
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Identifying inhibitors of neuronal degeneration useful for treating e.g. Alzheimer's disease, by determining the ability of a compound induce nuclear factor kappa B activation, with the involvement of presentin or Par-4 6

HPI;

2001-451872/48

Mccarthy J,

Cordell

Example 2 Page -; 66pp; English.

treating peripheral neuropathies, motorneuron disorders such as amyotrophic lateral sclerosis (ALS), Bell's palsy and various condition involving spinal muscular atrophy and paralysis. The present sequence is human presentlin PSI-FAD (familial Alzheimer's disease) mutant.

Note: This sequence is not shown in the specification but is derived formular presentlin (PSI) protein (SEQ ID NO: 4) shown in page 60-61 of the protein (SEQ ID NO: 4) shown in page 60-61 of the protein (SEQ ID NO: 4) shown in page 60-61 of the protein (SEQ ID NO: 4) shown in page 60-61 of the protein (SEQ ID NO: 4) shown in page 60-61 of the protein (SEQ ID NO: 4) shown in page 60-61 of the protein (SEQ ID NO: 4) shown in page 60-61 of the protein (SEQ ID NO: 4) shown in page 60-61 of the protein (SEQ ID NO: 4) shown in page 60-61 of the pag and PS2) and their corresponding DNA molecules. The invention also relates to a method for identifying inhibitors of neuronal degeneration, comprising cotransfecting eukaryotic host cells expressing presentlin (PS), with a Par-4 DNA, and an NF-kappa B dependent reporter construct, exposing the cotransfected cells to a candidate molecule and monitoring the ability of the candidate molecule to induce NF-kappa B activation. Presentlin proteins participates in nuclear factor kappa B (NF-kappa B) signalling and activation. The inhibitors of neuronal degeneration are useful for treating neurodegenerative disorders such as Alzheimer's disease, Parkinson's disease, pellepsy, multiple sclerosis, Huntington's chorea, Down's syndrome, nerve deafness, Meniere's disease and also for The invention relates to human Par-4 protein, prand PS2) and their corresponding DNA molecules. (AAE05466) presenilin protein derived from 60-61 of the conditions

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Matches 465
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04-JAN-2001;
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s; ALS;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The invention relates to human Par-4 protein, presentiin protein (PS1 CC and PS2) and their corresponding DNA molecules. The invention also crelates to a method for identifying inhibitors of neuronal degeneration, cc comprising cotransfecting eukaryotic host cells expressing presentlin (CC (PS), with a Par-4 DNA, and an NF-kappa B dependent reporter construct, cc exposing the cotransfected cells to a candidate molecule and monitoring ct the ability of the candidate molecule to induce NF-kappa B activation. CC Presentlin proteins participates in nuclear factor kappa B (NF-kappa B) (Signalling and activation. The inhibitors of neuronal degeneration care useful for treating neurodegenerative disorders such as Alzhelmer's disease, Parkinson's disease, epilepsy, multiple sclerosis, Huntington's CC chorea, Down's syndrome, nerve deafness, Meniere's disease and also for treating peripheral neuropathies, motorneuron disorders such as CC camyotrophic lateral sclerosis (ALS), Bell's palsy and various conditions in volving spinal muscular atrophy and paralysis. The present sequence ci shuman presentlin ps1-PAD (famillal Alzhelmer's disease) mutant.

CC Note: This sequence is not shown in the specification but is derived from the presentian (PS1) protein [SEQ ID NO: 4] shown in page 60-61 of the content of the specification (AAED5466).
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Identifying inhibitors of neuronal degeneration useful for treating e.g. Alzheimer's disease, by determining the ability of a compound induce nuclear factor kappa B activation, with the involvement of presentin or Par-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                1 MTELPAPLSYFQNAQMSEDNHLSNTVRSQNDNRERQEHNDRRSLGHPEPLSNGRPQGNSR
LPEWTAWLILAVISVYDLVAVLCPKGPLRMLVETAQERNETLFPALIYSSTMVWLVNMAE
                                                                                                                                                                                                                             GDPEAQRRVSKNSKYNAESTERESQDTVAENDDGGFSEEWEAQRDSHLGPHRSTPESRAA
                                                                                                                                           GDPEAQRRVSKNSKYNAESTERESQDTVAENDDGGFSEEWEAQRDSHLGPHRSTPESRAA
                                                                                                                                                                        LPEWTAWLILAVISVYDLVAVLCPKGPLRMLVETAQERNGTLFPALIYSSTMVWLVNMAE
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Pred.
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No. 5.
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5.3e-253;
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RESULT 48 AAW42375

AAW42375 standard;

Protein; 463

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B-8-B
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                                                                                                                                                                                                                                                                                                                                      This protein comprises the 463-amino acid human presentilin I (PS-I) gene product. A novel variant of PS-I encoded by a clone consolated from a human cerebellar cDNA library contains a 4-amino consolated from a human cerebellar cDNA library contains a 4-amino contains contains a 5' exon donor site in the exon contains a 5' exon donor contains and contains a 6-2 contains and contains 
                                                                                                                                                                                                                                                                             Best
                                                                                                                                                                                                                                                                                                 'Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                 neurodegenerative diseases are provided. Nucleotide sequences and intron-exon junctional sequences of examples of this splicing variant and probes (see AAV03247-49) for detecting this variant wh
146
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N-PSDB; AAV03246.
                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     disease,
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                   150 LVVLYKYRCYKVIHAWLIISSLLLLFFFSFIYLGEVFKTYNVAVDYITTVALLIWNLGVVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (SMIK ) SMITHKLINE BEECHAM CORP. (UYSF-) UNIV SOUTH FLORIDA. (UNIW ) UNIV WASHINGTON.
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                                                                                                                                                                                                                                                                             Local
LVVLYKYRCYKVIHAWLIISSLLLLFFFSFIYLGEVFKTYNVAVDYITVALLIWNFGVVG
                                                                                                        TLCMVVVVATIKSVSFYTRKDGQLIYTPFTEDTETVGQRALHSILNAAIMISVIVVMTIL 149
                                                                                                                                                                                        NDNRERQEHNDRRSLGHPEPLSNGRPQGNSRQVVEQDEEEDEELTLKYGAKHYIMLFVPV
                                                                                TLCMVVVVATIKSVSFYTRKDGQLIYTPFTEDTETVGQRALHSILNAAIMISVIVVMTIL
                                                                                                                                                                     NDNRERQEHNDRRSLGHPEPLSNGRPQGNSRQVVEQDEEEDEELTLKYGAKHVIMLFVPV
                                                                                                                                                                                                                                                                             Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Page 13-14; 20pp;
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                                                                                                                                                                                                                                                                                                                                        463
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                                                                                                                                                                                                                                                                                                                                                                             diagnostic reagents are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   screening, etc.
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VRXQ motif; human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene product.
                                                                                                                                                                                                                                                                         54.2%;
99.7%;
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                                                                                                                                                                                                                                                     Score 253; DB 19;
Pred. No. 3.8e-241;
); Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                             also provided.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         diagnosis of Alzheimer's
                                                                                                                                                                                                                                                                                             Length 463;
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                                                                                                                                                                                                                                                                                                                                                                                                     variant which
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RESULT 49
AAY51393
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                                                                                                    Matches
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Best Local
                                                                                                                                                                                      This invention describes a novel immunogenic composition comprising at least 1 antigenic component selected from an antigenic peptide (I) (linked to a carrier) or a multiantigenic peptide (II). The composition is useful for diagnosing or monitoring SPE-4 related protein profiles of nematodes and/or Alzheimer's disease patients, either in postmortem tissue, or from other tissue samples, where the tissue is from the brain, muscle or peripheral blood cells. The immunogenic composition can be used to diagnose Alzheimer's noninvasively and has neuroprotective and nootropic activity. This sequence represents the human S182 protein which
                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                       Example
                                                                                                                                                                                                                                                                                                                                              diagnosing Alzheimer's disease
                                                                                                                                                                                                                                                                                                                                                                                    WPI;
                                                                                                                                                                                                                                                                                                                                                                                                               L'Hernault SW
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                                                                                                                                                                                is used in the method
                                                                                                                                                                                                                                                                                                                                                         immunogenic composition comprising an antigenic component, useful
                                                                                                                                                                                                                                                                                                                                                                                                                                      (UYEM-) UNIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                26-JAN-1996;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          muscle;
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                                                                                                    Local Sinnes 244;
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                                                 PALIYSSTMVWLVNMAEGDPEAQRRVSKNSKYNAESTERESQDTVAENDDGGFSEEWEAQ 343
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PALIYSSTMVWLVNMAEGDPEAQRRVSKNSKYNAESTERESQDTVAENDDGGFSEEWEAQ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        immunogen; diagnosis; nematode; Alzheimer's disease;
; peripheral blood cell; neuroprotectant; nootropic;
                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                    4; Column 33-36; 23pp; English.
                                                                                                                                                       465
                                                                                                    Conservative
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                                                                                              52.2%; 5c.
100.0%; Pr
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                                                                                                                                                                                of the invention.
                                                                                                  Score 244; DB; Pred. No. 3e-0; Mismatches
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                                                                                                   3e-232;
hes 0;
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S182; human.
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                                                                                                   Gaps
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344 342

RDSHLGPHRSTPESRAAVQELSSSILAGEDPEERGVKLGLGDFIFYSVLVGKASATASGD

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RESULT 50
AAW12376
ID AAW12376
AC AAW12
XX AW12
XX AW12
XX 17-JU
DT 18-JU
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                                                                                                                                                                            Query Match
Best Local Similarity
Matches 436; Conserv
                                                                                                                                                                                                                                                                                                                                               A polypeptide (AAW12376) is the product of an S182 gene cDNA clone (AAT63207) isolated from a human brain library. Several mutations it the S182 gene have been found in families with members affected by early onset Alzheimer's disease (AD): in 2 families Met to Val at position 135; in 3 families Met to Val at 142; in 1 family Pro to Ser at 263; in 4 families Glu to Ala at 276; and in 1 family Glu to Gly at 280. Detection of the mutations is used to diagnose AD, or a predisposition to it. Transgenic animals can be produced that
                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                            are useful as models for screening and assessing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Disclosure; Fig 1A-D; 26pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New mutants of the S182 gene associated with familial disease - and related protein and transgenic animals, models for screening and assessing potential drugs
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         02-AUG-1995;
18-JUL-1995;
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O966h2 caenorhabdi
O9zpx3 arabidopsis
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Homo sapiens (Human).

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KOZIOWICZ A., Pape K., Biewald T.;

"The sequence of Homo sapiens PAC clone RP4-687Kl.";

"The sequence of Homo sapiens PAC clone RP4-687Kl.";
                                                                                                                                                   SEQUENCE FROM N.A.
MEDLINE-99063792; PubMed-9847074;
Sulston J.E., Waterston R.;
"Toward a complete human genome sequence.";
Genome Res. 8:1097-1108(1998).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q8Z1P8
                                                                                                                                                                                                                                    Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                         PRT;
   D503395A31C0EECB CRC64;
                                                                                                                                                                                                                                                                                                                                                          ALIGNMENTS
                                                                                                                                                                                                                                                                                                          289
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                                                                                                                                                                                                                          Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           O9ds06 foot-and-mo
O8v5p5 foot-and-mo
O8v5p5 foot-and-mo
O8v5p7 foot-and-mo
O8v5p6 foot-and-mo
O8v5p6 foot-and-mo
O8v5p6 foot-and-mo
O9v5p6 foot-and-mo
O9y2p1 neisseria m
O8yp90 anabaena sp
O978E8 thermoplasm
O9h44 homo sapien
O9h494 homo sapien
O99c66 hapiopharyn
O9cy15 mus musculu
O9dcf6 noncorhynchu
O9dcf8 vibrio chol
O8zke6 salmonella
O8zlp8 salmonella
O8zlp8 salmonella
                                                                                                                                                                                                                                                                                                                                                                                      Q8wn54 sus scrofa
Q9x1h7 rhinolophus
Q9x1h9 rhinolophus
Q8x3z1 sordhum bic
Q8uzk8 sen virus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q9dud0 tt virus. o
Q9kda2 bacillus ha
Q8uj34 agrobacteri
Q9t5g5 teladorsagi
Q96184 parapallase
                                                                                                                                                                                                                                                                                                                                                                                                                                      Q99ar2 tt virus. o
Q62571 mus spicile
Q66091 canine herp
Q99ar6 tt virus. o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q96184 parapallase
Q9xj95 streptococc
Q91gw4 oryza sativ
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Best Local S
Matches 161
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Best Local Similarity
Matches 204; Conser
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01-MAY-1999
01-JUN-2002
                                                                                                           Waterston R.;
Submitted (DEC-1999) to the EMBL,
EMBL; AJ008005; CAA07825.1; -.
EMBL; AC004858; AAF19254.1; -.
InterPro; IPR001108; Presentlin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             095465;
                                                                                                                                                                                                                        SEQUENCE FROM N.A.

KOZLOWICZ A., Pape K., Biewald T.;

"The sequence of Homo sapiens PAC clone RP4-687Kl.";

Submitted (JUN-1998) to the EMBL/GenBank/DDBJ databases.
                                                                                                    InterPro; IPRO
Pfam; PF01080;
                                                                                                                                                                                                                                                                  Genome Res. [3]
                                                                                                                                                                                                                                                                         Sulston J.E., Waterston R.; "Toward a complete human genome sequence."; Genome Res. 8:1097-1108(1998).
                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.

Powell C.S., Gegg M.E., Palmer M.S.;

"Human presentlin 1 gene encodes an alternative protein-minilin.";

Submitted (AUG-1998) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                           SEQUENCE
                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                    Submitted
                                                                                                                                                                                              Waterston R.H.;
                                                                                                                                                                                                                                                                                                       MEDLINE=99063792; PubMed=9847074;
                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
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                                                     161;
                                                             Similarity
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                                                  Score 161; DB; Pred. No. 1e-
0; Mismatches
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                                                                                                                                            EMBL/GenBank/DDBJ
                                                                                                                                                                                  EMBL/GenBank/DDBJ
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                                                                                          95C68A7EA0020874 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        184
                                                            DB 4;
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Submitted (SEP-2001) to the EMBL/G
EMBL; AF416717; AAL16811.1; -
InterPro; IPR001108; Presentlin.
Pfam; PF01080; Presentlin; 1.
PRINTS; PR01072; PRESENILIN.
SEQUENCE 378 AA; 42658 MW; A09
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q91WK6;
Q91WK6;
Q1-DEC-2001
01-DEC-2001
01-JUN-2002
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01-DEC-2001
01-MAR-2002
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Q96P33;
                                                  Strausberg R.;
Submitted (OCT-2001) to the EMBL,
EMBL; BC014744; AAH14744.1; -.
MGD; MGI:1202717; Psen1.
InterPro; IPR001108; Presenilin.
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Homo sapiens (Human).

Homo sapiens (Human).

Charvota; Metazoa; Chordata;

Charvota; Metazoa; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                          PSEN1
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01-DEC-2001 (TrEMBLrel.
01-MAR-2002 (TrEMBLrel.
Presenilin 1.
                                                                                                                                                                                                     SEQUENCE FROM TISSUE-EYE,
                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa;
Mammalia; Eutheria;
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                                                                                                                                                                                                                                                                                  NCBI_TaxID=10090;
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     SEQUENCE
                                   Pfam;
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  Presenilin; 1. AA; 29849 MW;
                                                                                                                                                                                                                                                                                                                      Chordata;
Rodentia;
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Catarrhini; Hominidae
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Sciurognathi;
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  16FB53FBE20EA4EB CRC64;
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thi; Muridae;
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Q90X08
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Best Local
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Best Local
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01-DEC-2001 (TrEMBLTel. 19, Lass
01-MAR-2002 (TrEMBLTel. 20, Lass
Presenilin 1.
Gallus gallus (Chicken).
Eukaryota; Metazoa; Chordata; C.
Archosauria; Aves; Neognathae; C.
                                                                                                                                                                                                                                                                                                   073869;
073869;
01-AUG-1998
01-AUG-1998
01-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Korade Mirnics Z., Keryanov S., Lovelock J., C
"Cloning of chicken presenilins.";
Submitted (JUL-2001) to the EMBL/GenBank/DDBJ
EMBL; AY043492; AAK95408.1;
InterPro; IPR001108; Presenilin.
Pfam; PF01080; Presenilin; 1.
PRINTS; PR01072; PRESENILIN.
SEQUENCE 468 AA; 52812 MW; B746BEDA3BACOBF
MEDLINE-98337349; PubMed-9674592;
Archer S., Hirano J., Diss J.K.J.,
"Expression and localization in the
Alzheimer's related PSI gene.";
Neuroreport 9:2049-2056(1998).
EMBL; Y17128; CAA76641.1; -.
                                                                                                                                                        Cyprinus carpio (Common carp).
Eukaryota; Metazoa; Chordata;
Actinopterygii; Neopterygii; T
Cyprinidae; Cyprinus.
NCBI_TaxID=7962;
                                                                              SEQUENCE FROM N.A. MEDLINE-98337349; Archer S., Hirano
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q90X08;
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87; Conserv
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nilarity 100.0%;
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Pred. No.
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Teleostei;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Craniata; Vert; Galliformes;
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J. 2.4e-55;
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Ostariophysi;
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phasianidae; Phasiani
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                                                             goz M.
                                                                                                                                                                                                    Cypriniformes;
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Best Local S
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Best Local Similarity
Matches 59; Conserv
                                                        01-OCT-2000
01-OCT-2000
01-DEC-2001
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VARIANT
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VARIANT
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                                                                                                                                                                                                                                          Leimer U., Haass C.;

"Expression, proteolytic processing, and amyloidogenic are refined presentiin-1.";

Submitted (APR-1999) to the EMBL/GenBank/DDBJ databases EMBL; AJ132931; CAB40386.1; -.
                         Brachydanio rerio (Zebrafish)
Eukaryota; Metazoa; Chordata;
                                                                                                                                                                                                            ZFIN; ZDB-GENE-991119-4; psen.
InterPro; IPR001108; Presenilin.
Pfam; PF01080; Presenilin; 1.
                                                                                                                                                                                                                                                                                                        Brachydanio rerio (Zebrafish)
Eukaryota; Metazoa; Chordata;
Actinopterygii; Neopterygii; T
Cyprinidae; Danio.
                                                Putative
                                                                                Q91991;
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                  Actinopterygii;
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Pfam; PF01080; Presenilin;
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Local Similarity 100.0%;
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2000 (TrEMBLrel. 15, L;
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e presenilin2 homolog.
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200
384 AA;
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                  Neopterygii;
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                Teleostei;
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Pred. No.
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; Craniata; Vertebrata; Euteleostomi;
Teleostei; Ostariophysi; Cypriniform
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                                 danio)
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2.5e-51;
                 Vertebrata; Euteleostomi;
Ostariophysi; Cypriniformes;
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Best Local :
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01-MAR-2002
01-MAR-2002
01-JUN-2002
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Q90ZE4;
01-DEC-2001
01-DEC-2001
01-MAR-2002
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SEQUENCE
                SEQUENCE FROM N.A. MEDLINE=21590369; Martinez-Mir A., C
                                                       Eukaryota; Me
Branchiostoma
                                                                                                                              Q8WS58
                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Actinopterygii; Neo Cyprinidae; Danio.
                                                                       Branchiostoma
                                                                               PS.
                                                NCBI_TaxID=7739;
                                                                                       Presenilin.
                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
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NCBI_TaxID=7955;
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                                                                                                                                                                                                                                   PF01080;
NCE 441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                               Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   441 AA;
                                                                                                              (TrEMBLrel.
                                                                                             (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Danio
                                                                       floridae
                                                                                                                                                                                                                                   AA;
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Submitted (AUG-1999) to the EMBL EMBL; AF178539; AAK61828.1; -. InterPro; IPR001108; Presenilin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Brachydanio rerio (Zebrafish)
Eukaryota; Metazoa; Chordata;
Actinopterygii; Neopterygii; T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Lardelli M., McCarty R., Tamme R., Kortschak D.; "The function of presenilin2 in zebrafish embryogenesis."; Submitted (FEB-2000) to the EMBL/GenBank/DDBJ databases. EMBL; AJ271795; CAB71930.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Jiang Y.-J., Davies A., Lewis J.;
"The cloning and function of ps2 in zebrafish.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR001108; presenilin.
Pfam; PF01080; Presenilin; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             383 ACFVAILIGLCLTLLLLAIFKKALPALPISITFGLVFYF
                                                                                                                                                                                                                                                                    th 8.4%; Similarity 100.0%; 39; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                 PRELIMINARY;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                     Presenilin; 1. AA; 49132 MW;
Canestro C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRESENILIN.
             PubMed=11733140;
                                                                              Jae (Florida lancelet) (Amphioxus).
Chordata; Cephalochordata; Branchiostomidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               49169
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Last annotation updat
                                                                                                                                                                     Created)
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                                                                                                                                                                                                 PRT;
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Craniata; Vert
Gonzalez-Duarte
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                                                                                                                                                                                                                                                                                                                                                                                      B0080F2ABC7674BD CRC64;
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7.2e-31;
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R., Albalat
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RESULT
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Matches
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Best Local
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                       Q9D616 PRELIMINARY; PKT; JJZ CM.
Q9D616;
Q1-JUN-2001 (TrEMBLrel. 17, Created)
Q1-JUN-2001 (TrEMBLrel. 17, Last sequence update)
Q1-JUN-2001 (TrEMBLrel. 17, Last annotation update)
Q1-JUN-2001 (TrEMBLRel. 17, Last sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q8WS59;
Q8WS59;
Q1-MAR-2002
Q1-MAR-2002
Q1-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

MEDLINE-21590369; PubMed-11733140;

Martinez-Mir A., Canestro C., Gonzalez-Duarte R., Albalat R.;

Martinez-Mir A., Canestro C., Gonzalez-Duarte R., Albalat R.;

"Characterization of the amphioxus presentlin gene in a high gene-
"Characterization of the vertebrate duplication during the vertebrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gene 279:157-164(2001).
EMBL; AF369891; AAL40416.1; -...
EMBL; AF369890; AAL40416.1; JOINE
InterPro: IPR000847; HTH.Lysr.
InterPro: IPR001108; Presenilin.
Pfam; PF001080; Presenilin; 1.
                                                                                                                                                                                                                                                                                                                                      Gene 279:157-164(2001).
EMBL; AP369891; AAL40414.1; JOINED.
InterPro; IPR000847; HTH_LysR.
InterPro; IPR001108; Presentlin.
             Mus musculus (Mouse).
Eukaryota; Metazoa; C
                                                                                                                                                                                                                                                                                                                              Pfam; PF01080; Presenilin; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRINTS; PRO1072; PRESENILIN.

PROSITE; PSO0044; HTH_LYSR_FAMILY; UNKNOWN_1.

SEQUENCE 504 AA; 55443 MW; 9C3794D0302859B4 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=7739;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Mei
Branchiostoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Branchiostoma
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lineage.";
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                                                                                                                                                                                                                                        Similarity
35; Conserv
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35; Conserv
                                                                                                                                                                                                                                                                                      PRO1072; PRESENILIN.
; PSO0044; HTH_LYSR_FAMILY; UNKNOWN_1
E 525 AA; 57598 MW; 2B14CF77A80F0
  Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            pma floridae (Florida lancelet) (Amphioxus).
Metazoa; Chordata; Cephalochordata; Branchiostomidae;
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 Rodentia;
               Chordata;
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Last seq
Last ann
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0; Mismatches
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Pred. No.
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Craniata; Veri
Sciurognathi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
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9.8e-27
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1e-26;
            Vertebrata;
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  Muridae;
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             Euteleostomi;
                                                  library,
 Murinae;
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Q96P3
AC Q96P3
AC Q96P3
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DT 01-DE
DT 01-DE
DT 01-BA
DT Prese
GN PSENZ
OS HOMO
OC ELKAR
OC Mamma
OX NCBIL
RN 1E1
RP SEQUE
RA Xu Y.
RL Submi
DR EMBLZ
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DR EMBLZ
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OR EMBLZ
SUBMI
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RA Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
RA Alizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
RA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA Kadota K., Matsuda Y., Nikaido I., Pesole G., Quackenbush J.,
RA Kuchl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Blake J., Beffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
RA Blake J., Beffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
RA Gustinckh S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
RA Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,
RA Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
RA Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
RA Sasaki H., Sato K., Wang K.H., Weitz C., Wilming L.,
RA Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
RA Hayashizaki Y.;
                                                                                           Best Loc
Matches
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Best Local S
Matches 28
                                                                                                                                           Query Match
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EMBL: AK014706; BAB29514.1; -.
InterPro; IPR001108; Presentlin.
Pfam: PF01080; Presentlin; 1.
PRINTS; PR01072; PRESENILIN.
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SEQUENCE
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Xu Y., Hu X., Zhou Y., Peng X.,

Submitted (SEP-2001) to the EMBL

EMBL; AF416718; AAL16812.1; -

InterPro; IPR001108; Presenilin.
                                                                                                                                                                                                                                                                                                                                                                                                                 Yfesc...
PSEN2.
Homo sapiens (Human).
Homosapiens (Human).
'~rvota; Metazoa; Chordata; '
'~rvota; Metazoa; Primates;
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01-MAR-2002 (TrEMBLrel.
Presenilin 2 transcript
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                                                                                                                                                                                                                                              Pfam;
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                                                                                                                       Local
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ISVYDLVAVLCPKGPLRMLVETAQERNE
                      ISVYDLVAVLCPKGPLRMLVETAQERNE 280
                                                                                                                                                                                                                                         PF01080; Presenilin;
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28; Conserv
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28; Consert
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390 AA;
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                                                                                        6.0%; S. larity 100.0%; Conservative 0;
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                                                                                      Score 28; DB Pred. No. 1.1 0; Mismatches
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                        Craniata; Vertebrata;
Catarrhini; Hominidae
                                                                                                                                                                                            A62C791CED9DCF8A CRC64;
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286
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9.4e-20;
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                                                                                                                    1.1e-19;
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RESULT 16
Q9GU38
ID Q9GU3
AC Q9GU3
AC Q9GU3
OT 01-MA
DT 01-JU
DE Prese
GN PS.
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                                                                                                                                                         Query Match
Best Local S
Matches 23
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Matches
                                 Q9GU38;
Q9GU38;
Q1-MAR-2001
Q1-MAR-2001
Q1-JUN-2002
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01-DEC-2001
01-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-DEC-2001
01-DEC-2001
01-JUN-2002
                                                                                                                                                                                                           "Cloning of chicken presentiins.";
Submitted (JUL-2001) to the EMBL/GenBank/DDBJ
EMBL; AY043493; AAK95409.1;
InterPro; IPR001108; Presentlin.
                           Presenilin.
                                                                                                                                                                                                        InterPro;
Pfam; PF0
                                                                                                                                                                                                                                                                                                       Gallus gallus (Chicken).
Eukaryota; Metazoa; Chordata;
                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                             NCBI_TaxID=9031;
                                                                                                                                                                                                                                                                                                 Archosauria;
                                                                                                                                                                                                                                                                                                                            Presenilin 2.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; BC010403; AAH10403.1; MGD; MGI:109284; Psen2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted (JUL-2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
TISSUE=BREAST TUMOR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PSEN2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR001108; Presenilin. Pfam; PF01080; Presenilin; 1. SEQUENCE 448 AA; 49964 MW; 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Strausberg R.;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                253 ISVYDLVAVLCPKGPLRMLVETAQERNE
                                                                                                                       83
                                                                                                                                       71
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Match
                                                                                                                               EELTLKYGAKHVIMLFVPVTLCM 93
                                                                                                                     EELTLKYGAKHVIMLFVPVTLCM
                                                                                                                                                                                                                                                                                                                                                                                                                     ISVYDLVAVLCPKGPLRMLVETAQERNE
                                                                                                                                                                                              PF01080;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity 28; Conserv
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1 (TrEMBLrel.
2 (TrEMBLrel.
                                  (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
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2 (TrEMBLrel.
                                                                                                                                                          Conservative
                                                                         PRELIMINARY;
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Last sequence update)
Last annotation updat
                                  Created)
Last sequence up
Last annotation
                                                                                                                                                          0;
                                                                                                                                                                 Score 23;
Pred. No.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 28;
Pred. No.
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Last sequence up
Last annotation
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                                                                                                                                                                                                                                                                                               Craniata; Vertebrata; Eute: ; Galliformes; Phasianidae;
                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Craniata; Vert
Sciurognathi;
                                                                                                                                                                                             534E6364C627E8B0 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2ED1DE7AFC3E0581 CRC64;
                                                                                                                                                          Mismatches
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thi; Muridae; Murinae; Mus
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                                                                                                                                                                          Length 451;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 448;
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Best Local S
Matches 20
                                                  Query Match
Best Local Similarity
Matches 15; Conserv
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Q9SIK7;
Q1-MAY-2000
Q1-MAY-2000
Q1-JUN-2002
                                                                                                                                                                                                                                                Lin X., Kaul S., Rounsley S.D., Shea T.P., Benito M.-I., Town C.D., Fujii C.Y., Mason T.M., Bowman C.L., Barnstead M.E., Feldblyum T.V., Buell C.R., Ketchum K.A., Lee J.J., Ronning C.M., Koo H., Moffat K.S., Cronin L.A., Shen M., Vanaken S.E., Umayam L., Tallon L.J., Gill J.E., Adams M.D., Carrera A.J., Creasy T.H., Goodman H.M., Somerville C.R., Copenhaver G.P., Preuss D., Nierman W.C., White O., Eisen J.A., Salzberg S.L., Fraser C.M., Venter J.C.; "Sequence and analysis of chromosome 2 of the plant Arabidopsis thaliana.";
                                                                                                                Submitted (MAR-2000) to the EMBL/GenBank/DDBJ EMBL; AC007113; AAD23630.1; ... InterPro; IPR001108; Presenilin. Pfam; PF01080; Presenilin; 1. PRINTS; PR01072; PRESENILIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                  Arabidopsis thaliana (Mouse-ear cress).

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosid

eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (OCT-1999) to the EMBL/GenBank/DDBJ
EMBL; AF197881; AAG28518.1; -
InterPro; IPR001108; Presentlin.
Pfam; PF01080; Presentlin; 1.
PRINTS; PR01072; PRESENTLIN.
SEQUENCE 582 AA; 63782 MW; 07934E7C452199F
                                                                                                                                                                                                                                                                                                                                                                    STRAIN=CV. COLUMBIA; MEDLINE=20083487; Pu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Putative presenilin AT2G29900.
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Tyrsin O.
                                                                                                       SEQUENCE
                                                                                                                                                                                   Lin X.;
                                                                                                                                                                                               STRAIN-CV.
                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=3702;
                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Mc
Helicacea; Helicidae;
NCBI_TaxID=31229;
 313
                        380
                                                                                                                                                                                                                                    Nature 402:761-768(1999).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  294 DLVAVLCPKGPLRMLVETAQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DLVAVLCPKGPLRMLVETAQ
              KLGLGDFIFYSVLVG
KLGLGDFIFYSVLVG
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                                                                                                       397
                                                                                                                                                                                               COLUMBIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Metazoa; Mollusca; Gastropoda; Pulmonata; Stylommatophora; Helicidae; Helix.
                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (TrEMBLrel. 13, (TrEMBLrel. 13, (TrEMBLrel. 21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   larity 100.0%;
Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene isolated
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                                                                                                      AA;
                                                                                                                                                                                                                                                                                                                                                                    PubMed=10617197;
                                                                                                      44011
                        394
                                                               100.0%;
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                                                                              3.2%;
                                                                                                      MW;
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                                                  0,:
                                                  Score 15; DB; Pred. No. 2e-0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 20; DB 5; L
Pred. No. 2.3e-11;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                      DE6804D6CA186783 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mollusk Helix lucorum.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Dvorianchikov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  397
                                                                            DB 10;
                                                               2e-06;
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                                                                            Length 397
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                                                  Indels
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RESULT 18
Q9SDG2
ID 09SDG
AC Q9SDG
AC Q9SDG
DT 01-MA
DT 01-JU
DE EST A
DT 01-JU
DE GENEA
OC ENKAR
OC SPERIO
OC SPERIO
OC SPERIO
CON NCBI.
RN [1]
RP SEQUI
RC STRAI
RA SASSI
RT "OTYA
RT CLONK
RT SUBMI
DR PRINT
SQU SEQUI
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Q97UCJ

1D 7UCJ

AC Q99

AC Q9
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                                                                                              Query Match
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Matches
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Best Local S
Matches 15
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STRAIN-CV. NIPPONBARE;
Sasaki T., Matsumoto T., Yamamoto
"Oryza sativa nipponbare(GA3) geno
clone:P0038F12.";
Submitted (DEC 1999) to the EMBL/G
EMBL; AP000836; BAA88182.1; -.
Interpro; IPR001108; Presenilin.
Pfam; Pf01080; Presenilin; 1.
PRINTS; PR01072; PRESENILIN.
SEQUENCE 478 AA; 50100 MW; BC1
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Q97UC3;
Q1-OCT-2001
Q1-OCT-2001
Q1-OCT-2001
                                                                                                                                                                                          She Q., Singh R.K., Confalonieri F., Zivanovic Y., Allard G., Awayez M.J., Chan-Welher C.C.-Y., Clausen I.G., Curtis B.A., De Moors A., Erauso G., Fletcher C., Gordon P.M.K., Helkamp-de Jong I., Jeffries A.C., Kozera C.J., Medina N., Peng X Thi-Ngoc H.P., Redder P., Schenk M.E., Theriault C., Tolstrup N., Charlebols R.L., Doolittle W.F., Duguet M., Gaasterland T., Garrett R.A., Ragan M.A., Sensen C.W., Van der Oost J.;
"The complete genome of the crenarchaeon Sulfolobus solfataricus Proc. Natl. Acad. Sci. U.S.A. 98:7835-7840(2001).
EMBL; AE006900; AAK43198.1;
Hypothetical protein; Complete proteome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Oryza sativa (Rice).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Ehrhartoideae; Oryzeae; Oryza.
CCBI_TaxID=4530;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         O9SDG2 PRELIMINARY; PRT; 478 AA.
09SDG2;
01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
EST AU058092(S1536) corresponds to a region of th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A. STRAIN-ATCC 35092 / DSM 1617 / P2; MEDLINE-21332296; PubMed-11427726;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-0CT-2001 (TIEMBLIZEL 18, C
01-0CT-2001 (TIEMBLIZEL 18, L
01-0CT-2001 (TIEMBLIZEL 18, L
Hypothetical protein SSO3092.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=2287;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sulfolobus
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sulfolobus solfataricus
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                                                  172
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                                               LLLFFFSFI 180
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l Similarity 100.0%;
15; Conservative 0;
                                                                                                 Similarity
9; Conserv
                                                                                            1.9%;
nilarity 100.0%;
Conservative 0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Created)
Last sequence update)
Last annotation update)
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                                                                                              Score 9; DB 1
Pred. No. 2.3
0; Mismatches
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Pred. No.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sulfolobales;
                                                                                                                         DB 17;
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hes 0;
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RESULT 21
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                                                                                                                                             EMBL; AF NON_TER
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Eukaryota; Metrazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
Aulopiformes; Synodontidae; Harpadontinae; Harpadon.
NCBI_TaxID=94310;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-MAY-2000 (TrEMBLrel. 13,
01-MAY-2000 (TrEMBLrel. 13,
01-MAY-2000 (TrEMBLrel. 13,
RAG1 protein (Fragment).
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Actinopterygii; Neopterygii; Teleostei; Euteleostei
Protacanthopterygii; Salmoniformes; Osmeridae; Pleco
NCBI_TaxID=61084;
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01-MAY-2000 (TrEMBLrel.
01-MAY-2000 (TrEMBLrel.
01-MAR-2001 (TrEMBLrel.
                                                                                                                                                                                                                      "Late changes in spliceosomal evolution.";
                                                                                                                                                                                                                                                                   STRAIN=RAGIBDUCK;
MEDLINE=99398697; PubMed=10468597;
Venkatesh B., Ning Y., Brenner S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=99398697; PubMed=10468597;
Venkatesh B., Ning Y., Brenner S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RAG1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               evolution.";
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                                                                                                                          SEQUENCE
                                                                                                                                                                                  Proc. Natl. Acad. Sci. U. EMBL; AF137199; AAD54566.
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"Late changes in spliceosomal introns
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN=RAG1AYU;
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Q93EF9
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                                                Lo C.-F.,
Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN-TAIWAN;
MEDLINE-20517548; PubMed-11062040;
Tsai M.F., Yu H.T., Tzeng H.F., Leu J.H., Chou C.M., Huang C
Wang C.H., Lin J.Y., Kou G.H., Lo C.F.;
"Identification and characterization of a shrimp white spot
virus (WSSV) gene that encodes a novel chimeric polypeptide
cellular-type thymidine kinase and thymidylate kinase.";
Virology 277:100-110(2000).
                                                                                                                                                                                                                "Identification of a nucleocapsid protein (VP35) gene of shrimp spot syndrome virus and characterization of the motif important targeting VP35 to the nuclei of transfected insect cells."; Virology 293:44-53(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NON_TER
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"Helicobacter hepaticus genome: construction of an ordered cosmid
library and sequence analysis of the selected genomic regions.";
Submitted (MAR-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; AF358706; AAL16696.1; -.
InterPro; IPR002033; Translocase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
Putative sec-independent protein translocase (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE-21844071; PubMed-11853398; Chen L.L., Leu J.H., Huang C.J., Chou C.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-JUN-2002
01-JUN-2002
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                                                                                                                  STRAIN-TAIWAN;
                                                                                                                                                  SEQUENCE FROM N.A.
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                                             (OCT-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                   Kou G.-H.;
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063071; O1-NOV-1996 (TrEMBLTel. 01,
01-NOV-1996 (TrEMBLTel. 01,
01-MAY-1997 (TrEMBLTel. 03,
                                                     stimulates nucleosome disruption by the SWI/SNF complex.";
Mol. Cell. Biol. 17:895-905(1997).
EMBL; X99723; CAA68062 1.
                                                                                                       SEQUENCE FROM N.A.
STRAIN-SPRAGUE-DAWLEY;
MEDLINE-97154526; PubMed-9001244;
                                                                                                                                                       Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Rodentia;
                                                                                                                                                                         Brahma protein (Fragment).
Rattus norvegicus (Rat).
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                              SEQUENCE
                                                                                                                                              NCBI_TaxID=10116;
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MEDLINE=21548311; PubMed=11689662;
Yang F., He J., Lin X., Li Q., Pan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               White spot syndrome virus (WSSV). Viruses; unclassified viruses.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=92652;
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                                          "CDNA cloning, sequence, and expression Submitted (DEC-1999) to the EMBL/GenBan i - SIMILARITY BELONGS TO CHITINASE CL HYDROLASES).

EMBL; AB035668; BAA884081; - EMBL; AB035668; BAA884081; - Interpro; IPR001579; Chitinase_18/2. Interpro; IPR001579; Chitinase_18/2. Interpro; IPR001233; Glyco_hydro_18. Pfam; PF00704; Glyco_hydro_18; 1. PRINTS; PR00551; 25GLOBULIN. PROSITE; PS01095; CHITINASE_18; 1.
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Putative ABC transno---
BATN1953 occ--
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O9SLP4;
01-MAY-2000 (TrEMBLrel. 1
01-MAY-2000 (TrEMBLrel. 1
01-JUN-2002 (TrEMBLrel. 2
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Q8VQL7;
Q1-MAR-2002
Q1-MAR-2002
Q1-JUN-2002
                              PROSITE;
Glycosida
SEQUENCE
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                                                                                                                                                                       Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Liliales; Liliaceae; Tul
NCBI_TaxID=110455;
                                                                                                                                                                                                  Tulipa bakeri.
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Brucellaceae; Brucella.
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                             ycosidase; Hydrolase.
@UENCE 314 AA; 35090 MW;
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TE; PS00402; BPD_TRANSP_INN_MEMBR; UNKNOWN_1
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                             Ketchum K.A., Nelson
Fraser C.M.;
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NCBI_TaxID=1299
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STRAIN=CO-92 / BIOVAR ORIENTALIS;

MEDLINE=21470413; PubMed=11586300;

Parkhill J., Wren B.W., Thomson N.R., Titball R.W., Holden M.T.G.,

Prentice M.B., Sebaihia M., James K.D., Churcher C., Mungall K.L.,

Prentice M.B., Sebaihia M., James K.D., Churcher C., Mungall K.L.,

Baker S., Basham D., Bentley S.D., Brooks K., Cerdeno-Tarraga A.M.,

Chillingworth T., Cronin A., Davies R.M., Davis P., Dougan G.,

Feltwell T., Hamlin N., Holroyd S., Jagels K., Karlyshev A.V.,

Leather S., Moule S., Oyston P.C.F., Quail M., Rutherford K.,

Simmonds M., Skelton J., Stevens K., Whitehead S., Barrell B.G.;

"Genome sequence of Yersinia pestis, the causative agent of plague.

Nature 413:523-527(2001).

EMBL; Au414149; CAC90506.1; -.
                                                                                     MEDLINE=20036896; PubMed=10567266; White O., Elsen J.A., Heidelberg J.F., Hickey E.K., Peterson J.D., White O., Elsen J.A., Heidelberg J.F., Nelson W.C., Richardson D.L., Dodson R.J., Haft D.H., Gwinn M.L., Nelson W.C., Shen M., Woffat K.S., Qin H., Jiang L., Pamphile W., Crosby M., Shen M., Moffat K.S., Qin H., Jiang L., Pamphile W., Crosby M., Shen M., Manathevan J.J., Lam P., McDonald L., Utterback T., Zalewski C., Makarova K.S., Aravind L., Daly M.J., Minton K.W., Fleischmann R.D., Ketchum K.A., Nelson K.E., Salzberg S., Smith H.O., Venter J.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-MAY-2000 (TrEMBLrel.
01-MAY-2000 (TrEMBLrel.
01-MAR-2002 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-MAR-2002 (TrEMBLrel.
01-MAR-2002 (TrEMBLrel.
01-MAR-2002 (TrEMBLrel.
"Genome sequence of the radioresistant bacterium radiodurans R1.";
Science 286:1571-1577(1999).
                                                                                                                                                                                                                                                                                                                                                                 Deinococcus radiodurans.
Bacteria; Thermus/Deinococcus
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
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                                                                                                                                                                                                                                                                                                                                              Deinococcus
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IBLrel. 20,
IBLrel. 20,
I protein.
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el. 13,
el. 20,
pR2600
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A032A0DF974481D4 CRC64
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23;
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Best Local S
Matches 8
                                                                                                                                                                                                                                                                                                                                077794; PRELIMINARY; 077794; 01-NOV-1998 (TrEMBLrel. 0 01-NOV-1998 (TrEMBLrel. 0 11-MAR-2002 (TrEMBLrel. 2
                                       Steingold
Page R.L.;
                                                                                                                                                                                    Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=9615;
                                                                                                                                                                                                                                                 Multidrug resistance protein N
Canis familiaris (Dog).
Eukaryota; Metazoa; Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (MAY-1998) to the EMBL/Gen
-: SIMILARITY: BELONGS TO THE BAND
EMBL; AL023554; CAA19027.1; -.
InterPro; IPR001107; Band_7.
InterPro; IPR001972; Stomatin.
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01-AUG-1998 (TrEMBLrel. 07, Created)
01-AUG-1998 (TrEMBLrel. 07, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
Hypothetical 39.3 kDa protein C16G5.07C in chromoson
SPBC16G5.07C.
                                                             SEQUENCE FROM N.A.
MEDLINE-98229528; PubMed-9568108;
Steingold S.F., Sharp N.J., McGah
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pfam; PF01145; Band_7; 1.
SMART; SM00244; PHB; 1.
PROSITE; PS01270; BAND_7; FALSE_NEG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Schizosaccharomyces pombe (Fission yeast).
Eukaryota; Fungi; Ascomycota; Schizosaccharomycetes;
Schizosaccharomycetales; Schizosaccharomycetaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Hypothetical protein. SEQUENCE 354 AA; 39274 MW;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Lyne M., Wood V., Rajandream M.A., Reinhardt R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN=972;
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DR2600; -.
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8; Conserv
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ilarity 100.0%;
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               of
                                                                                                                                                                                                                     Carnivora;
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            canine MDR1 mRNA:
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                                                                                                                                                                                                                                                                                                                                   08, Created)
08, Last sequence update)
20, Last annotation update)
                                                                   McGahan M.C.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL/GenBank/DDBJ databases THE BAND 7 / MEC-2 FAMILY.
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Pred. No
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Pred. No
                                                                                                                                                                                                                                                                                                           MDR1 (Fragment).
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                                                                                                                                                                                                                                                    Craniata;
                                                                                                                                                                                                                     Fissipedia;
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1C3CEAA9C1EAEE4C CRC64;
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                                                                      C
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                                                                      .s.,
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Canis.
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RESULT 33
Q9ZPX3
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Q9ZPX3 PRELIMINARY;
Q9ZPX3;
Q9ZPX3;
Q1-MAY-1999 (TrEMBLrel. 1
Q1-DEC-2001 (TrEMBLrel. 1
Q1-DEC-2001 (TrEMBLrel. 1
At2g18410 protein.
                                                                                                                                                                             Waterston R.;
Waterston R.;
"Direct Submission.";
"AC006678; AAK68392.1;
"InterPro; IPR001622; K+channel_pore.
InterPro; IPR001622; K+channel_pore.

SEQUENCE 379 AA; 43265 MW; 551B265BB97FFBD2 CRC64;
SEQUENCE 379 AA; 43265 MW; 551B265BB97FFBD2 CRC64;
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Q966H2;
Q1-DEC-2001
Q1-DEC-2001
Q1-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cell lines and in viv., (1998). Anticancer Res. 18:393-400(1998). EMBL; AF092810; AAAG62505.1; -. InterPro, IPR001140; ABCtranprtrTM.
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NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                    "The sequence of C. elegans submitted (MAR-1999) to the
                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. STRAIN=BRISTOL N2; MEDLINE=99069613;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Caenorhabditis elegans.
Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                "Genome sequence of the nematode C. elegans: a pinvestigating biology. The C. elegans Sequencing Science 282:2012-2018(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hypothetical
                                                                                                                                                                                                                                                                    STRAIN-BRISTOL N2;
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369
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l protein R05G9.2.
                                                                PRELIMINARY;
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RA Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Adams M.D., Celniker S.E., Li P.W., Hoskins R.A., Galle R.F.,
RA Adams M.D., Celniker S.E., Li P.W., Hoskins R.A., Galle R.F.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
RA Wan K.H., Dayle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
RA Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier A., Chandra I.,
RA Borkova D., Botchan M.R., Bouck J., Cadieu E., Center A., Chandra I.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Ge Pablos B., Delcher A., Deng Z., Mays A.D., Dew I., Dietz S.M.,
RA Durbin K.J., Evangelista C.C., Ferraz C., Ferriera S., Fleischmann W.,
RA Durbin K.J., Evangelista C.C., Ferraz C., Ferriera S., Fleischmann W.,
RA Hostin D., Houston K.A., Howland T.J., Hernandez J.R., Houck J.,
RA Hostin D., Houston K.A., Howland T.J., Wei M.-H., Ibegwam C.,
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CG8690 protein.
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STRAIN=(V. COLUMBIA;

MEDLINE=20083487; PubMed=10617197;

Lin X., Kaul S., Rounsley S.D., Shea T.P., Benito M.-I., Town C.D.,

Fujii C.Y., Mason T.M., Bowman C.L., Barnstead M.E., Feldblyum T.V.,

Buell C.R., Ketchum K.A., Lee J.J., Ronning C.M., Koo H., Moffat K.S.,

Cronin L.A., Shen M., Vanaken S.E., Umayam L., Tallon L.J., Gill J.E.,

Adams M.D., Carrera A.J., Creasy T.H., Goodman H.M., Somerville C.R.,

Copenhaver G.P., Preuss D., Nierman W.C., White O., Eisen J.A.,

Salzberg S.L., Fraser C.M., Venter J.C.;

"Sequence and analysis of chromosome 2 of the plant Arabidopsis

thaliana.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Drosophila melanogaster (Fruit fly).

Bukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;

Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;

Ephydroidea; Drosophilidae; Drosophila.

NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases EMBL; AC006439; AAD15496.1; -. SEQUENCE 392 AA; 43648 MW; 57505E9A96D96DCA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. STRAIN-CV. COLUMBIA;
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Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;

eurosids_II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=20196006; PubMed=10731132;
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nummel B.E., Kodira C.D., Kraft C., Kennison J.A., Ketchum K.A.
Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X.,
RA Liu X., Mattei B., McIntosh T.C., McLeod M.P., McPherson D.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., McShrefi A.,
RA Mount S.M., Moy M., Murphy B., Murphy L., Muzny D.M., Nelson D.L.,
RA Nelson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M.,
RA Palazzolo M., Pittman G.S., Pan S., Pollard J., Puri V., Reese M.G.,
RA Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shen H.,
RA Shue B.C., Siden-Kiamos I., Simpson M., Skupski M.P., Smith T.,
RA Spier E., Spradling A.C., Stapleton M., Strong R., Sun E.,
Svirskas R., Tector C., Turner R., Venter E., Wang A.H., Wang X.,
RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J.,
RA Williams S.M., Woodage T., Worler E., Wang A.H., Wang X.,
RA Zheng X.H., Zhong F.N., Zhong W., Zhon G., Zhao Q., Zheng L.,
RA Zheng X.H., Zhong F.N., Zhong W., Zhou X., Zhu X., Smith H.O.,
RA Zhong X.H., Zhong W., Zhou X., Zhu X., Smith H.O.,
RL Science 287:2185-2195(2000)
DR EMBL, AE003837; AAF59083.1; -.
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01-JUN-1998
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                                                                                                                                                                          "Biosynthesis of the ansamycin antibiotic rifamycin: the molecular analysis of the rif biosynthetic gene (Amycolatopsis mediterranei 5699."; Chem. Biol. 5:69-79(1998).
 MEDLINE=21201076;
Yu T.-W., Mueller
                                                                                    MEDLINE-98165773; PubMed-9497318; Kim C.G., Yu T.W., Eryhle C.B., Handa S., "3-Amino-5-hydroxybenzoic acid synthase, if the precursor of mC7N units."
                                                                                                                                                                                                                                       August P.R., Tang L. Taylor M., Hoffmann
                                                                                                                                                                                                                                                  MEDLINE=98174059;
August P.R., Tang
                                                                                                                                                                                                                                                                              STRAIN-S699;
                                                                                                                                                                                                                                                                                                                                      Amycolatopsis mediterranei (Nocardia mediterranei).
Bacteria; Firmicutes; Actinobacteria; Actinobacteridae;
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                           STRAIN-S699
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                                                                           antibiotics.";
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 PubMed=11278540;
R., Mueller M.,
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InterPro; IPR001140; ABCtranprtrTM.
InterPro; IPR003439; ABC_transportr.
Pfam; PF00664; ABC_membrane; 1.
Pfam; PF00605; ABC_tran; 1.
ProDom; PF000006; ABC_tran; 1.
SMART; SM00382; AAA; 1.
PROSITE; PS00211; ABC_TRANSPORTER; 1.
ATP-binding; Transport.
SEQUENCE 538 AA; 59432 MW; 09A82E1
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01-NOV-1996
01-JUN-2002
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Q03982;
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Devine S.E., Hussain A., Davide J.P., Melera P.W.;
"Full length and alternatively spliced pgp-1 transcriptesistant Chinese hamster lung cells.";
J. Biol. Chem. 266:4545-4555(1991).
-i-SIMILARITY: BELONGS TO THE ABC TRANSPORTER FAMILY.
EMBL; M59252; AAA37003.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -!- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PRO
EMBL; AF040570; AAC01725.1; -.
InterPro; IPR004638; Efflux_EmrB.
InterPro; IPR003662; sub_transporter.
TIGRFAMS; TIGR00711; efflux_EmrB; 1.
PROSITE; PS00216; SUGAR_TRANSPORT_1; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Leistner E., Floss H.G.; "Mutational analysis and reconstituted expression of the biosynthetic genes involved in the formation of 3-amino-5-hydroxybenzoic acid, the starter unit of rifamycin biosynthesis in Amycolatopsis mediterranei 5699.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=10031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Cricetulus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      P-glycoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Transmembrane.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (JAN-2001) to the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Floss H.G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          August P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN-S699;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
    116
                                           420 LTLLLLAI 427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    247 WLILAVIS 254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
nes 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16 WLILAVIS
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                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (TrEMBLrel.
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ilarity 100.0%;
Conservative
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Rodentia;
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Pred. No.
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Pred. No
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                                                                                                                                                                             09A82E1818AE09C3 CRC64;
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                                                                                         Mismatches
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. 36;
                                                                                                             DB 11;
o. 37;
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01-JUN-2002
01-JUN-2002
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Bacteria; Firmicutes; Bacillus/Clostridium group; Clostridia; Clostridiales; Clostridiaceae; Clostridium.
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Q97178;
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                                                                                                                                                                                                                                                                                                                                                                                       bacterium Clostridium acetobutylicum.";
J. Bacteriol. 183:4823-4838(2001).
EMBL; AE007686; AAK79740.1; -.
                                                                                                                                                                                                                                                               Complete proteome. SEQUENCE 581 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Tatusov R.L., Sabathe F., Doucette-Stamm I Bennett G.N., Koonin E.V., Smith D.R.; "Genome sequence and comparative analysis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Noelling J., Breton G., Omelchenko M.V., Makarova K.S., Gibson R., Lee H.M., Dubois J., Qiu D., Hitti J., Wolf
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAC1775
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Mammalia; Eutheria;
NCBI_TaxID=10090;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
STRAIN-ATCC 824 /
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Submitted (FEB
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                                                                                                                          Similarity 100 8; Conservative
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                                                                                                                                                                                                                                                            581 AA;
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239
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                                                                                                                                                         DB 16;
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RESULT 39 095052

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095052

PRELIMINARY;

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                                                                                                                                                                                                         SEQUENCE FACE.....

UOZUMÍ K., Nakaichi M.;

"Canine MDR.";

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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q8WNU6;
Q8WNU6;
01-MAR-2002 (TrEMBLrel. 2:
01-MAR-2002 (TrEMBLrel. 2:
01-JUN-2002 (TrEMBLrel. 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Lamerdin J.E., McCready P.M., Skowronski E., Viswanathan V., Burkhart-Schultz K., Gordon L., Dias J., Brower A., Stilwagen S., Phan H., Velasco N., Do L., Regala W., Terry A., Garnes J., Danganan L., Erler A., Christensen M., Georgescu A., Avila J., Lit Attix C., Andreise T., Trankheim M., Amico-Keller G., Coefield J., Duarte S., Lucas S., Bruce R., Thomas P., Quan G., Kronmiller B., Arellano A., Sanders C., Ow D., Nolan M., Trong S., Kobayashi A., Olsen A.S., Carrano A.V.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pfam; PF00271; helicase_C; 1. Pfam; PF00176; SNF2_N; 1. SMART; SM00490; HELICC; 1.
                                                  NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MDR1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted (DEC-1998) to the EMBL/GenBank/DDBJ databases. EMBL; ACC06127; AAC97986.1; -. InterPro; IPR001550; Helicase_C. InterPro; IPR000330; SNF2_N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                    ProDom; PD000006; ABC_transportr; SMART; SM00382; AAA; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; (Mammalia; Eutheria; Carnivora; NCBI_TaxID=9615;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Canis familiaris (Dog).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Multidrug resistance p-glycoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATP-binding; Helicase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID-9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens (Human).

Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SMARCA4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BRG-1-human (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-MAY-1999
01-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       095052;
01-MAY-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NON_TER
                                                                                                              PROSITE;
                                                                                                                                                                                                      Pfam; PF00664; ABC_membrane; Pfam; PF00005; ABC_tran; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        442 EQDEEEDE 449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            40
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
8; Conserv
                                                                                                        PS00211; ABC_TRANSPORTER;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1.7%;
Larity 100.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              628
628 AA;
                  899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ) (TrEMBLrel.) (TrEMBLrel.
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668
; 73546 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 628
73264 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20, Createo;
20, Last sequence update;
21, Last annotation updat
21, restain (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10,
19,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 8; DB 4; Pred. No. 42; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Craniata; Vertebrata;
Fissipedia; Canidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 367164900E01A45B
                      F8CD80F7C934B31A CRC64;
                                                                                                           UNKNOWN_1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ΑĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 628
                                                                                                                                                                                                                                                                                                                                                                                          databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Euteleostomi;
Canis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PDE4A and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
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J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   s.,
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RESULT

Q63928

ID 208

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AC 268
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Q8R0K1
ID Q8R0F
AC Q8R0F
DT 01-JU
RAS n
CC EUkasa
CC EUKasa
RL SUDmi
RAP SEQUE
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Best Local S
Matches 48
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Best Local S
Matches 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q63928 PRELIMINARY;
Q63928;
Q63928;
Q1-NOV-1996 (TrEMBLrel. 01, C
Q1-NOV-1996 (TrEMBLrel. 01, L
Q1-DEC-2001 (TrEMBLrel. 19, L
Brg1 protein (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-JUN-2002 (TrEMBLrel. 21, Created)
01-JUN-2002 (TrEMBLrel. 21, Last sequence)
01-JUN-2002 (TrEMBLrel. 21, Last annotation)
Hypothetical 87.3 kDa protein (Fragment).
Mus musculus (Mouse).
Eukaryota, Metazoa; Chordata; Craniata; Venammalia; Eutheria; Rodentia; Sciurognath;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q8R0K1;
PRINTS; PR00503; BROMODOMA SMART; SM00297; BROMO; 1. SMART; SM00487; DEXDC; 1. SMART; SM00490; HELICC; 1.
                                                                                                                                         Pfam;
                                                                                                                                                                                                 InterPro;
InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=10095;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (APR-2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A. Strausberg R.;
                                                                                                               Pfam;
                                                                                                                                                                                                                                                                             Dev. Biol 161:229-242(1994).
EMBL; S68108; AAC66670.1; -.
MGD; MGI:88192; Smarca4.
InterPro: IPR001487; Bromodomain.
                                                                                                                                                                                                                                                                                                                                                                 homeotic gene regulator.";
Dev. Biol. 161:229-242(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                         Randazzo F.M., Khavari P., Crabtree
"brg1: a putative murine homologue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A. MEDLINE=94123856; PubMed=7904967;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SMARCA4 OR BRG1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hypothetical protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=10090;
                                                                                                                                                                                                                                                        InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         420
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EQDEEEDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LTLLLLAI
                                                                                                            PF00439;
PF00271;
PF00176;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EQDEEEDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LTLLLLAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BC026672; AAH26672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity .8; Conser
                                                                                                                                                                                                 IPR001650; IPR000330;
                                                                                                                                                                                                                                                        IPR001410; DEAD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          749 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      71
                                                                                                               SNF2_N;
                                                                                                                  helicase_C; 1.
SNF2_N; 1.
                                                                                                                                                                      bromodomain;
                                                                                    BROMODOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1.7%; DE
100.0%; Pr
                                                                                                                                                                                           Helicase_C.
SNF2_N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          87280
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Crabtree
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Last sequence up
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Craniata; Vertebrata; Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1FB0CBB0561A55BA CRC64;
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of the
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                                                                                                                                                                                                                                                                                                                                                                                                                         Tamkun J., Rossant .
ne Drosophila brahma
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;; Murinae; Mus
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RESULT 44

Q60502
ID 06050
AC Q6055
AC Q6050
DT 01-NC
DT 01-T
CDE P-91y
GN PGP-GO
CE EUKaz
OC Mamma
OC CTice
OX NCB1.
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Q9TSU2
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Matches 8
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Best Local S
Matches 8
                                                        Cricetulus sp.
Eukaryota; Metazoa;
Mammalia; Eutheria;
                   Cricetulus.
NCBI_TaxID=10031;
                                                                                                                                               P-glycoprotein.
                                                                                                                                                                   01-NOV-1996
01-JUN-2002
                                                                                                                                                                                                            01-NOV-1996
                                                                                                                                                                                                                                    Q60502;
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-!- SIMILARITY: BELONGS TO
EMBL; AB029153; BAA87071.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Okai Y., Nakamura N., Okuda M., Watari T.,
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01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
Multi-drug resistance related (Fragment).
Felis silvestris catus (Cat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Carnivora; Fissipedia; Felidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROSITE; PS00633; BROM
PROSITE; PS50014; BROM
ATP-binding; Helicase
NON_TER 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATP-binding; Transport.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ProDom;
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                                                                                                                                                                                                                                                                                                                                                                                                     420
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InterPro; IPR001140; ABCtranprtrTM
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                                                                                                                                                                                                                                                                                                                                                              798
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Pfam; PF00664; ABC_membrane; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          663
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                                                                                                                                                                                                                                                                                                                                                            LTLLLAI 805
                                                                                                                                                                                                                                                                                                                                                                                                     LTLLLAI 427
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SM00382; AAA;
                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity 100
8; Conservative
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8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PD000006; ABC_transportr;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PS00211; ABC_TRANSPORTER;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1163 11:
1163 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1022 AA;
                                                                                                                                                                   (TrEMBLrel. 01, (TrEMBLrel. 01, (TrEMBLrel. 21,
                                                                                                                                                                                                                                                       PRELIMINARY;
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BELONGS TO THE ABC TRANSPORTER FAMILY
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BROMODOMAIN_2;
                                                            Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of multidrug
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Hasegawa A., Tsujimoto
of multidrug resistance
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Last sequence update)
Last annotation updat
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Pred. No.
                                                            Craniata; Vertebrata; Euteleostomi;
Sciurognathi; Muridae; Cricetinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. 73 
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
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5. 65;
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Matches 8
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Best Local
          Multidrug resistance prote
pGY1.
Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chorda
Mammalia; Eutheria; Rodeni
                                                                                                                  Q9JK64;
Q9JK64;
Q1-OCT-2000
01-OCT-2000
01-JUN-2002
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097140;
01-MAY-1999
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EMBL; M59254; AAAA37005.1; -.
InterPro; IPR003593; AAA_ATPase.
InterPro; IPR001140; ABC_transportr.
InterPro; IPR003439; ABC_transportr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hsu Y.-S., Chang W.-T., Newell P.C., "A repressor controlling cell-type splityostellum.", Submitted (NOV-1998) to the EMBL/Genr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pfam; PF00064; ABC_membrane; 2. Pfam; PF00005; ABC_tran; 2. ProDom; PD000006; ABC_transportr;
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01-MAY-1999 (TrEMBLrel. 10,
01-MAY-1999 (TrEMBLrel. 10,
Prespore-specific protein (F
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SEQUENCE 1169 AA; 128939 MW; 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
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"Full length and alternatively spliced
resistant Chinese hamster lung cells.",
J. Biol. Chem. 266:4545-4555(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE=LUNG;
MEDLINE=91154265; PubMed=1671863;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         747 LTLLLLAI 754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         !- SIMILARITY: BELONGS TO THE ABC TRANSPORTER FAMILY.
                                                                                                                                                                                                                                                 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               45
                                                                                                                                                                                                                                                                                                                                                      66 DEEEDEEL 73
                                                                                                                                                                                                                                                                                                                                                                                             Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mycetozoa;
                                                                           1231 AA;
                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                               Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                 Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            138196 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   eum (Slime mold).
Dictyosteliida;
                                                                                                                                                                                                                                                                                                                                                                                                                .0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cell-type specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                , Created)
, Last sequence upo
, Last annotation (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                               0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 8;
                 Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                                                                                                                                                                                                                                                                                  Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               72E25B7CE29DC185 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               074956F6094F5A58 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gross J.D.;
                                                                                                                                                                                                                                                                                                                                                                                                     DB 77;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Dictyostelium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 11;
o. 74;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Melera
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       transcripts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           databases
                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1231;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
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                                                                                                                                                                                                                                                                                                                                                                                               Indels
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                     Rattus
                                                                                                                                                                                                                                                                                                                                                                                           Gaps
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RESULT 48
046605
ID 04660
AC 04660
DT 01-JU
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924L6
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Best Local S
Matches 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 resistance protein Mdria.";

L Submitted (APR-2000) to the EMBL/GenBank/DDBJ databases.

- i- SIMILARITY: BELONGS TO THE ABC TRANSPORTER FAMILY.

R EMBL, AF257746; AAF6907.1;

R InterPro; IPR003593; AAA_ATPase.
R InterPro; IPR003140; ABC_transportr.
R InterPro; IPR003439; ABC_transportr.
R Pfam; PF00664; ABC_membrane; 2.
R Pfam; PF00005; ABC_tran; 2.
R Pfam; PF00005; ABC_tran; 2.
R Pfam; PF000006; ABC_transportr; 2.
SMART; SM00342; AAA, 2.
SMART; SM00342; AAA, 2.
SMART; SM00342; AAA, 2.
SMART; SM00342; AAA; 140326 MW; B5C1DF89DFC986C5 CRC64; SEQUENCE 1272 AA; 140326 MW; B5C1DF89DFC986C5 CRC64;
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Best L
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046605;
046605;
01-JUN-1998
01-JUN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q924L6
Q924L6;
Q1-DEC-2001 (TIEMBLIEL 19,
Q1-DEC-2001 (TIEMBLIEL 19,
Q1-JUN-2002 (TIEMBLIEL 21,
                                                                                                                                                                                                                                                                                                                                                       Yamazaki M., Leake B.F., Kim R.B.;
"Molecular Cloning of Rat Mdrla cDNA.";
Submitted (JUL-2000) to the EMBL/GenBank/DDBJ databases
EMBL; AF286167; AAR83023.1;
InterPro; IPR001140; ABCtranprtrTM.
InterPro; IPR003439; ABC_transportr.
                                                                                                                                                                                                                                                                                       Pfam; PF00664; ABC_membrane; 2.
pfam; PF00005; ABC_tran; 2.
probom; PD000006; ABC_transportr; 2.
prosite; PS00211; ABC_TRANSPORTER; UNKNOWN_2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN-WISTAR; TISSUE-LIVER;
Hooiveld G.J.E.J., Wilms J.W.J., Hagenbuckeijer D.K.F., Muller M.;
"Cloning and functional characterization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN=SPRAGUE-DAWLEY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=10116;
[1]
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SEQUENCE FROM N.A.
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                                                                                                                                        849
                                                                                                                                                                        420 LTLLLAI 427
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                                                                                                                                        LTLLLLAI
                                                                                                                                                                                                       8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8; Conserv
                                                                                                                                                                                                                                                                           1272 AA;
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(TrEMBLrel.
                                                                                                                                                                                                      1.7%; S
llarity 100.0%;
Conservative 0;
                                                   PRELIMINARY;
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90
Created)
Last sequ
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Pred. No.
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Craniata; Vertebrata;
Sciurognathi; Muridae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                       Mismatches
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 sequence update)
                                                                                                                                                                                                                                                                           D9A17457362DA0ED CRC64;
                                                                                                                                                                                                                       DB 11;
5. 79;
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5. 79;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Muridae;
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                                                                                                                                                                                                                                       Length 1272;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
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; Murinae; Rat
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002793
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Best Local S
Matches 8
                                                                                 Query Match
Best Local :
                                                                   Matches
                                                                                                                                                                                                                  Ovis aries (Sheep).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                002793
002793;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Puel O., Lepage J.F., Alvinerie M., Galtier P., Pineau T
Submitted (JAN-1998) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: BELONGS TO THE ABC TRANSPORTER FAMILY.
EMBL; AF045016; AAC02113.1; -.
InterPro; IPR003593; AAA_ATPase.
InterPro; IPR003593; AAA_ATPase.
InterPro; IPR003439; ABC_transportr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Canis familiaris (Dog).
Eukaryota; Metazoa; Chordata; Craniata; Ven
Mammalia; Eutheria; Carnivora; Fissipedia;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa;
Mammalia; Eutheria;
Bovidae; Caprinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam; PF00664; ABC_membrane; 2. Pfam; PF00005; ABC_tran; 2. ProDom; PD000006; ABC_transportr;
                                                                                                                                                                                    ProDom; PD000006; ABC_transportr;
SMART; SM00382; AAA; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-JUL-1997 (TrEMBLrel. 04, Created)
01-JUL-1997 (TrEMBLrel. 04, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
Multidrug resistance protein-1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SMART; SM00382; AAA; 2.
PROSITE; PS00211; ABC_TRANSPORTER;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                  PROSITE; PS00211; ABC_TRANSPORTER; ATP-binding; Transport. SEQUENCE 1285 AA; 142020 MW; 9
                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATP-binding; Transport SEQUENCE 1280 AA; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TISSUE=COLON;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=9940;
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                               420
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 862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     858 LTLLLLAI
                                                                   Local Similarity
nes 8; Conserv
                               LTLLLAI 427
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8; Conser
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ilarity 100.0%;
Conservative
                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
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                                                                                   100.0%;
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                                                                 Score 8; DB 6; Pred. No. 80; 0; Mismatches
                                                                   0;
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                                                                                                                                    90153E617C44856F CRC64;
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                                                                                 DB 6;
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ia; Canidae;
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                                                                                                 Length 1285;
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Canis.
                                                                 0;
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                                                                 Gaps
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DESCUT 50
002569 ' PRELIMINARY; PRT; 1726 AA.
C 002569; PRELIMINARY; PRT; 1726 AA.
C 002569; PRELIMINARY; PRT; 1726 AA.
C 002569; PROV.1996 (TrEMBLIZEL 01, Last sequence update)
DT 01-WOV-1996 (TrEMBLIZEL 01, Last sequence update)
DP 01-WOV-1996 (TrEMBLIZEL 01, Last sequence update)
DP 01-WOV-1996 (TrEMBLIZEL 01, Last sequence update)
DP 01-WOV-1996 (TrEMBLIZEL 01, Last sequence S. (Rhouri E.)
RN (1]
RN (1]
RN (1)
RN (1)
RP POTENTH POTENTIAL DAVIDERS (RHOURI E.)
RN (2)
RP PRESE (PROW N.A.
RC STRAIN-BELEM;
RN MEDLIME-9121950; PubMed-2022952;
RN MEDLI
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Title:
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1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5   1.5		1.5   4.96   VGLX_PRWIT   E07555 pecidicishis   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988   1988  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plb/Ul escherichia p41032 salmonella p43639 saccharomyc o68955 heliobacter p31136 escherichia o9yb24 aeropyrum p 026892 methanobact 034685 bacillus su p57846 pasteurella 010796 mycobacteri p82348 mus musculu 067696 aquifex aeo	es contract of the contract of	P49772 mus musculu P13675 mus musculu P13675 mus musculu P33212 rhizobium f P5712 rhizobium s Q11117 caenorhabdi P44080 haemophilus P38842 saccharomyc P21250 onchocerca Q9tm31 cyanidium c Q04734 saccharomyc P51858 homo sapien P3929 saccharomyc P48779 mycoplasma P47672 mycoplasma P47670 mycoplasma P47670 mycoplasma P47670 mycoplasma P47671 mycoplasma P47671 mycoplasma P78010 mycoplasma P78010 mycoplasma P78010 scherichia P5824 escherichia P37681 escherichia P37681 escherichia P49911 rattus norv P21365 escherichia P39687 homo sapien P39298 escherichia P15610 escherichia P15610 escherichia Q84173 chlamydia t P48870 cyanidium c Q97pp8 scherichia O84173 chlamydia t P48870 cyanidium c Q97pp8 scherichia

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MEDLINE-9619301; PubMed-8641442;
Sahara N., Yahagi Y.-I., Takagi H.,
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"Cloning of a gene bearing missense mutations in early-onset Alzheimer's disease.";
                                                                                                                                                                                                                                                                                                                                                                    PSN1_HUMAN STANDARD; PRT; 467 AA. P49768; Q14762; Q15719; Q15720; Q1-QCT-1996 (Rel. 34, Created) Q1-QCT-1996 (Rel. 34, Last sequence update) 15-JUN-2002 (Rel. 41, Last annotation update) Presentlin 1 (PS-1) (S182 protein).
MEDLINE=96160372;
Kovacs D.M., Fause
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                                                                                                                                                  Shirasawa T.,
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Mammalia; Eutheria;
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                                                                  Madan A., Qin S., Abbasi N., Dors M., Ratcliffe Dickhoff R., Shaffer T., James R., Lasky S., Hoc sequence of the gene for presentlin 1."; (NOV-1998) to the EMBL/GenBank/DDBJ databases.
                                 A., Hashim
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normal and Neurobiol.
        INTERACTION WITH DELTA-2 CATENIN.

MEDLINE=99155075; PubMed=10037471;
Levesque G., Yu G., Nishimura M., Zhang D.M., Levesque L., Yu
Xu D., Liang Y., Rogaeva E., Ikeda M., Duthie M., Murgolo N.,
Yu D., Liang Y., Rogaeva E., Ikeda M., Duthie M., Mrgolo N.,
YunderVere P., Bayne M.L., Strader C.D., Rommens J.M., Fraser
                                                                                                    Baki L., Marambaud P., Efthimiopoulos S., Georgakopoulos A., Cui W., Shioi J., Koo E., Ozawa M., Friedrich V.L., Robakis N "Presenilin-1 binds cytoplasmic epithelial cadherin, inhibits cadherin/pl20 association, and regulates stability and functithe cadherin/catenin adhesion complex.", Proc. Natl. Acad. Sci. U.S.A. 98:2381-2386(2001).
                                                                                                                                                                                                                                                  "Separation of presentilin function in and endoproteolysis of Notch."; proc. Natl. Acad. Sci. U.S.A. 97:5913-
                                                                                                                                                                                                                                                                                                                                                                              FUNCTION, AND MUTAGENESIS OF ASP-257 AND ASP-385.

MEDLINE-20359495; PubMed=10899933;

Berezovska O., Jack C., McLean P., Aster J.C., Hicks C., Xia W.,

Wolfe M.S., Kimberly W.T., Weinmaster G., Selkoe D.J., Hyman B.T.;

"Aspartate mutations in presenilin and gamma-secretase inhibitors impair notchl proteolysis and nuclear translocation with relative preservation of notchl signaling.";

J. Neurochem. 75:583-593(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Two transmembrane aspartates in presenilin-1 endoproteolysis and gamma-secretase activity. Nature 398:513-517(1999).
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J. Biol Che
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MEDLINE=20014554; PubMed=10545183;
Steiner H., Romig H., Pesold B., Philipp U.
Loetscher H., Jacobsen H., Haass C.;
"Amyloidogenic function of the Alzheimer's
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=97317150; PubMed=9173929; Podilisny M.B., Citron M., Amarante P., Sherrington R., Xia W., Podilisny M.B., Citron M., Amarante P., Sherrington R., Xia W., Zhang J., Diehl T., Levesque G., Fraser P., Haass C., Koo E.H., Seubert P., St George-Hyslop P., Teplow D.B., Selkoe D.J.; Presenilin proteins undergo heterogeneous endoproteolysis between Thr291 and Ala299 and occur as stable N- and C-terminal fragments inormal and Alzheimer brain tissue."; Neurobiol. Dis. 3:325-337(1997).
                                                                                                                                                                                                                                                                                                FUNCTION, AND MUTAGENESIS
MEDLINE=20283925; pubmed=1
Kulic L., Walter J., Multh
Romig H., Capell A., Steir
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                                                                                                                                                                                                     PubMed=11226248;
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RP VARIANTS AD V-139; V-146; Y-163; T-267; A-280 AND G-280.

REDLINE=96024664; PubMed=7550356;

RA Clark R.F., Hutton M., Fuddner R.A., Froelich S., Karran E.,

RA Talbot C., Crook R., Lendon C.L., Prihar G., He C., Korenblat K.,

RA Martinez A., Wragg M., Busfield F., Behrens M.I., Myers A., Norton

RA Morris J., Mehta N., Pearson C., Lincoln S., Baker M., Duff K.,

RA Arcos M., Madrigal L., Collinge J., Humphreys C., Asworth T.,

RA Arcos M., Madrigal L., Collinge J., Humphreys C., Asworth T.,

RA Sarner S., Fox N.C., Harvey R., Kennedy A., Roques P.K., Cline R.T.

RA Phillips C.A., Venter J.C., Forsel L., Axelman K., Lilius L.,

RA Haltla M., Poyhonen M., Viltanen M., Winblad B., Kosik K.S.,

RA Lantos P., Lannfelt L., Rossor M.N., Roberts G.W., Adams M.

"The structure of **--
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Penet C.
Heilig R
Agid Y.,
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MEDLINE-95379971; PubMed-7651536;

Rogaev E.I., Sherrington R., Rogaeva E.A., Levesque G., Ikeda M.,

Liang Y., Chi H., Lin C., Holman K., Tsuda T., Mar L., Sorbi S.,

Nacmias B., Piacentini S., Amaducci L., Chumakov I., Cohen D.,

Lannfelt L., Fraser P.E., Rommens J.M., St George-Hyslop P.H.;

"Familial Alzheimer's disease in kinoreds with missense mutations
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Agid Y., Frebourg T.;
Mutations of the presentlin I gene
Alzheimer's disease.";
Hum. Mol. Genet. 4:2373-23\(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cruts M., Backhovens H., Wang S.-Y., van de Jonghe C., Webnert A., de Voecht J., d Bruyland M., Datson N., Weissenbach J., d Hendriks L., Van Broeckhoven C.;
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MEDLINE-96177673; Pu
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Cruts M., Hendriks L., Van Broeckhoven C.
"The presentlin genes: a new gene family
Tanabe H., Nishimura
Ogihara T.;
"Three different muta
                                                                Kamino K.,
                                                                                       MEDLINE-96310408;
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MEDLINE=96177674; PubMed=8634712;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Molecular genetic analysis of familial disease linked to chromosome 14q24.3."; Hum. Mol. Genet. 4:2361-2372(1995).
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MEDLINE-98180715; I
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                                                                                                                                  yJ. Goate A.M.;
structure of the presentlin 1 (S182)
novel mutations in early onset AD fami
Genet. 11:219-222(1995).
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senilin mutations in Alzheimer's
Mutat. 11:183-190(1998).
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R., Martinez M., Mall
different mutations
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                                                                6; ARG-163 AND THR-213.
PubMed-8733303;
Sakaki Y., Yoshiwa
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PubMed=8634711;
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15-JUL-1999 (Rel. 38
16-OCT-2001 (Rel. 40
Presenilin 1 (PS-1).
"Molecular cloning, sequencing, and brain expression of the presentlin 1 gene in Microcebus murinus.";
Biochem. Biophys. Res. Commun. 228:430-439(1996).
-i. FUNCTION: MAY PLAY A ROLE IN INTRACELLULAR SIGNALING AND GENEROMESTON OR IN LINKING CHROMATIN TO THE NUCLEAR MEMBRANE.
EXPRESSION OR IN THE CYTOPLASMIC PARTITIONING OF PROTEINS.
-i. SUBUNIT: PREDOMINANTLY HETERODIMER OF A N-TERMINAL (NTF) AND C-TERMINAL (CTF) ENDOPROTEOLYTICAL FRAGMENT (BY SIMILARITY).
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MEDLINE=97369208; PubMed=9225696;
Crook R., Ellis R., Shanks M., Thal L.J.,
                                                                                                                                                                                           Microcebus murinus (Lesser mouse lemur).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleo
Mammalia; Eutheria; Primates; Strepsirhini; Cheirogaleidae;
                                                                                                     Bellis M.
                                                                                                                                                                                                                                                                                    PSN1_MICMU P79802;
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Neurosci. Lett. 208:195-198(1996).
[21]
                                                                                                                 Calenda
                                                                                                                           MEDLINE-97079199;
                                                                                                                                       TISSUE=Brain;
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16-OCT-2001 (Rel. 40, Last annotation
Presenilin 1 (PS-1) (S182 protein).
PSENI OR PSNLL.
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           Rattus norvegicus (Rat)
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    Mammalia;
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ALTERNATIVE PRODUCTS: 2 ISOFORMS; I-467 (SHOWN HERE
463; ARE PRODUCED BY ALTERNATIVE SPLICING.
TISSUE SPECIFICITY: FOUND PREDOMINANTLY IN NEURONS
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                                                                                                                                                                                                                                                                                                    SIMILARITY
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PRESENILIN 1
  Craniata; Ver
Sciurognathi;
                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                       POTENTIAL
                                                                                                                                                                                                                                                             D986FF2CA7F2975C CRC64;
                                                                                                                                                                                                                       Mismatches
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                                                                                         468
                                                                                                                                                                                                                                                                                                                                                            (POTENTIAL).
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                                                  update)
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            Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                1.4e-95;
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 Muridae; Murinae; Rattus
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Matches 104
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                                                                             CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                      DOMAIN
TRANSMEM
                                                                                                                                                          SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN=Wistar; TISSUE=Brain; MEDLINE=96255262; PubMed=8710164;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN=Wistar; TISSUE=Brain; MEDLINE=97199371; PubMed=9047347;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=10116;
[1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  s SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation - European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN. GOLGI ENDOPLASMIC RETICULUM (BY SIMILARITY). PTM: PHOSPHORYLATED ON SERINE RESIDUES (BY SIMILARITY). SIMILARITY: BELONGS TO THE PRESENILIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MAY FUNCTION IN THE CYTOPLASMIC PARTITIONING OF PROTEINS. SUBUNIT: PREDOMINANTLY HETERODIMER OF A N-TERMINAL (NTF) AND C-TERMINAL (CTF) ENDOPROTEOLYTICAL FRAGMENT (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COSCI. LETT. 206:113-116(1996).
FUNCTION: MAY PLAY A ROLE IN INTRACELLULAR SIGNALING AND GE
EXPRESSION OR IN LINKING CHROMATIN TO THE NUCLEAR MEMBRANE.
    104;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                D82578; BAA11575.1; D82363; BAA11564.1;
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                    Similarity
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  Conservative
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                    Score 104;
Pred. No.
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K -> R (IN
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                                                                                                                                     ALTERNATIVE SIMILARITY).
                                                                                                                                                                                            POTENTIAL.
ALTERNATIVE PROTEOLYTIC CLEAVAGE SITE
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CYTOPLASMIC
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  1.1e-92;
hes 0;
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                                    Length 468;
                                                                               CRC64;
  Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kawamata T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (BY SIMILARITY).
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P49769; Q9J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P49769; Q9JLP9;
01-OCT-1996 (Rel. 34, Last sequence update)
01-OCT-1996 (Rel. 34, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Presenilin 1 (PS-1) (S182 protein).
PSENI OR PSNLI OR AD3H.
                                                                                                                                                                                                                                                                                                                                                                                                                               Sherrington R., Rogaev E.I., Liang Y., Rogaeva E.A., Leves Ikeda M., Chi H., Lin C., Li G., Holman K., Tsuda T., Mar Foncin J.-F., Bruni A.C., Montesi M.P., Sorbi S., Rainero Pinessi L., Nee L., Chumakov I., Pollen D., Brookes A., Sanseau P., Polinsky R.J., Wasco W., da Silva H.A.R., Hair Pericak Vance M.A., Tanzi R.E., Roses A.D., Fraser P.E., Rommens J.M., St George-Hyslop P.H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                          the European Bioinformatics Institute. The use by non-profit institutions as not removed. modified and this statement is not removed. entitles requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
STRAIN-SAM P8; TISSUE-Hippocampus;
Kumar V.B., Vyas K.C., Choudhary V.,
                                                                                                                                                                                                                                                                                                                          MEDLINE=97442406; PubMed=9295283; Mitsuda N., Roses A.D., Vitek M.P.; Mitsuda N. Tegulation of the mouse J. Biol. Chem. 272:23489-23497(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOUSE
                  EMBL; AF007560; AAB72049
EMBL; AF149111; AAF73153
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                                                                                                                                                                                                                                         senenscence accelerated mice (SAM P8) mice."; Submitted (MAY-1999) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                          Morley J.E.
                                                                                                                                                                                                                                                                                                                                                                       STRAIN-129/SvJ
                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                   "Cloning of a gene bearing missense mutations in early-onset familial Alzheimer's disease.";
Nature 375:754-760(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=95319502;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TISSUE-Brain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=10090;
                                                                                                                                                                                                                                                              "Molecular cloning and tissue distribution
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               124
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       64
                                                                                                                                          FUNCTION: MAY PLAY A ROLE IN INTRACELLULAR SIGNALING AND GENE EXPRESSION OR IN LINKING CHROMATIN TO THE NUCLEAR MEMBRANE. MAY FUNCTION IN THE CYTOPLASMIC PARTITIONING OF PROTEINS. SUBUNIT: PREDOMINATLY HETERODIMER OF A N-TERMINAL (NTF) AND C-TERMINAL (CTF) ENDOPROTEOLYTICAL FRAGMENT (BY SIMILARITY). SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN. GOLGI AND ENDOPLASMIC RETICULUM (BY SIMILARITY).
PIM: PHOSPHORYLATED ON SERINE RESIDUES (BY SIMILARITY). SIMILARITY: BELONGS TO THE PRESENILIN FAMILY.
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                                                                                        SWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the Enguropean Bioinformatics Institute. There are no resurby non-profit institutions as long as its content
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                                        L42177; AAC42094.1; -.
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Sciurognathi;
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                                                                      noved. Usage by and for (See http://www.isb-sib.
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thi; Muridae; Murinae; Mus
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uda T., Mar L.,
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16-OCT-2001 (Rel. 40,
16-OCT-2001 (Rel. 40,
Presenilin 1 (PS-1).
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Mammalia; Eutheria;
Bovidae; Bovinae; Bo
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                                                                                                               TISSUE-Brain;
                                                                                                                                            Bovidae; Bovinae;
NCBI_TaxID=9913;
                                                                                                                                                                                       Bos taurus
                                                                                                                                                                                               PSEN1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TRANSMEM
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                                                                                                                        SEQUENCE FROM
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                                                                                                                                                                                                                                                                                                                  273
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97; Conser
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                                                                                                                                                       Bos.
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                                                                                                                                                                             Chordata;
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Last
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annotation
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POTENTIAL.
COTOPLASMIC (POTENTIAL).
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ion update)
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6.8e-86;
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Sabara N., Shirasawa T., Mori H.;
Sabara N., Shirasawa T., Mori H.;
Sabara N., Shirasawa T., Mori H.;
"Molecular cloning of bovine presentlin 1 gene.";
Submitted (DEC-1997) to the EMBL/GenBank/DDBJ databases.
-i- FUNCTION: MAY PLAY A ROLE IN INTRACELLULAR SIGNALING AND GENEROPESSION OR IN LINKING CHROMATIN TO THE NUCLEAR MEMBRANE.
FUNCTION IN THE CYTOPLASMIC PARTITIONING OF PROTEINS (BY
FUNCTION IN THE CYTOPLASMIC PARTITIONING OF PROTEINS (BY SIMILARITY).

SUBJUNIT: PREDOMINANTLY HETERODIMER OF A N-TERMINAL (NTF) C-TERMINAL (CTF) ENDOPROTEOLYTICAL FRAGMENT (BY SIMILARIT SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN. GOLGI AN ENDOPLASMIC RETICULUM (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Phosphorylation; Endoplasmic reticulum;
1 298 PRESENILIN 1 NTF SUBUNIT
9 467 PRESENILIN 1 CTF SUBUNIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CYTOPLASMIC (POTENTIAL).

POTENTIAL.

POTENTIAL

ALTERNATIVE PROTEOLYTIC CLEAVAGE SITE (B SIMILARITY).

ALTERNATIVE PROTEOLYTIC CLEAVAGE SITE (B SIMILARITY).

S -> T (IN STRAIN SAM P8).

D -> E (IN STRAIN SAM P8).

E -> CM (IN STRAIN SAM P8).

E -> RRD (IN STRAIN SAM P8).

ER -> RRD (IN STRAIN SAM P8).

ER -> RRD (IN STRAIN SAM P8).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pecora; Bovoidea;
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                                                         SIMILARITY).
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(BY SIMILARITY).
(BY SIMILARITY).
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RESULT 6
PSN1_XENIA
ID PSN1_X
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AC 012976
DT 15-JUL
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Best Local
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012976;
15-JUL-1999 (Rel. 3
15-JUL-1999 (Rel. 3
15-JUL-1999 (Rel. 3
            Tsujimura A., "Cloning of X
                                                                                                                                                  Eukaryota; Metazoa; Chordata; Amphibia; Batrachia; Anura; M
Xenopodinae; Xenopus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
TRANSMEM
DOMAIN
                              MEDLINE=97223465; PubMed=9070286; Tsujimura A., Yasojima K., Hashim
                                                                         TISSUE=Brain
                                                                                         SEQUENCE FROM
                                                                                                                                                                                                             Xenopus laevis (African clawed frog).
                                                                                                                                                                                                                                    PS-ALPHA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF01080; Presenilin; 1.
PRINTS; PR01072; PRESENILIN.
Transmembrane; Phosphorylation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the European Bioinformatics Institute. The use by non-profit institutions as long a modified and this statement is not removed. entities requires a license agreement (See )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This SWI
between
                                                                                                                                                                                                                                                    Presenilin alpha.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHAIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IHWKGPLRLQQAYLIMISALMALVFIKYLPEWTAWLILAVISVYDLVAVLCPKGPLRMLV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ETAQERNETLFPALIYSSTMVWLVNMAEGDPEAQR
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95; Conser
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       equires a license agreement (See http://www.isb-sib.ch/announce/email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                         N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ã,
                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                      38, Created)
38, Last sequence update)
38, Last annotation updat
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                                                                                                                                                                    Chordata; Craniata; Vertebrata; Euteleostomi; Anura; Mesobatrachia; Pipoidea; Pipidae;
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                                  Hashimoto-Gotoh
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Pred. No.
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CYTOPLASMIC (POTENTIAL).
POTENTIAL.
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POTENTIAL.
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ALTERNATIVE PROTEOLYTIC CLEAVAGE
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              and
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6e-84;
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              -beta cDNAs and their
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RESULT
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Best Local 9
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15-JUL-1999 (Rel. 38, Created)
15-JUL-1999 (Rel. 38, Last sequence up
15-JUN-2002 (Rel. 41, Last annotation
Presenilin 2 (PS-2) (Fragment).
PSEN2 OR PSNL2 OR PS2.
                                                                                                                                                                                                                                                            MICMU
                                                                                                                                                                                                                                                                                                                                                                                                                                        TRANSMEM CARBOHYD
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Calenda A., Mestre-Frances N., Czech C., Pradier L., Petter A., Perret M., Bons N., Bellis M.;
"Cloning of the presenilin 2 cDNA and its distribution in brain the primate, Microcebus murinus: coexpression with harapp and
                                      MEDLINE=99167105; PubMed=10069575; Calenda A., Mestre-Frances N., Cze
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRANSMEM TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Biochem. Biophys. Res. Commun. 231:392-396(1997).

-: FUNCTION: MAY PLAY A ROLE IN NEGATIVE REGULATION OF APOPTOTIC CASCADES DURING OOGENESIS AND IN DEVELOPMENTALLY MATURED TISSUES SUCH AS BRAIN TISSUE.

-: SUBCELLULAR LOCATION: Integral membrane protein (By similarity:
-:- TISSUE SPECIFICITY: HIGHEST EXPRESSION IN OVARIES AND TO A LESS EXTENT IN TESTIS, INTESTINE, KINNEY, BRAIN, EYE AND LUNG. WEAK EXPRESSION IN LIVER AND HEART. PRESENT IN TRACE AMOUNTS IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           between the Swiss Institute of Bioinformatic Ther the European Bioinformatics Institute. Ther use by non-profit institutions as long a modified and this statement is not removed.
                                                                  TISSUE=Brain;
                                                                              SEQUENCE FROM N.A.
                                                                                                       NCBI_TaxID=30608;
                                                                                                                   Microcebus
                                                                                                                                           Eukaryota;
                                                                                                                                                         Microcebus
                                                                                                                                                                                                                                                PSN2_MICMU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This
                                                                                                                                Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
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                                                                                                                                                                                                                                                                                                          tities requires a license agreement (S send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SKELETAL MUSCLE.
DEVELOPMENTAL STAGE: ABUNDANT
EXPRESSION IS RAPIDLY REDUCED
FERTILIZATION STAGES.
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                                                                                                                                                                                                                                                                                                                                                                           Similarity
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                                                                                                                           murinus (Lesser mouse lemur).
Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Butheria; Primates; Strepsirhini; Cheirogaleidae;
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the Eurc
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Mammalia; Eutheria;
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Neurobiol.
 Levy-Lahad
                     MEDLINE-95365816;
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PTM: PHOSPHORYLATED ON SERINE RESIDUES (BY SIMILARITY: BELONGS TO THE PRESENILIN FAMILY
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SUBUNIT: PREDOMINANTLY HETERODIMER OF A N-TERMINAL (NTF) AND C-TERMINAL (CTF) ENDOPROTEOLYTICAL FRAGMENT (BY SIMILARITY).
SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN. GOLGI AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                European Bioinformatics Institute.
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FUNCTION: MAY PLAY A ROLE IN INTRACELLULAR SIGNALING AND GENERAL STRUCKER MEMBRANE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SWISS-PROT entry is copyright. It is produced through a collable en the Swiss Institute of Bioinformatics and the EMBL outst European Bioinformatics Institute. There are no restrictions by non-profit institutions as long as its content is in the content of the 
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                                                                                                                              sapiens (Human)
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Primates;
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disease.";
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Wijsman
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rogaev E.I., Sherrington R., Roga
Liang Y., Chi H., Lin C., Holman
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Kovacs D.M., Fausett H.J.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nature 376:775-778(1995).
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                                                                                                                                               AD HIS-62.
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Wehnert A., Serneels S., Sherrington R., Hutton M. St George-Hyslop P.H., Hofman A., van Broekhoven "Estimation of the genetic contribution of present
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MEDLINE=20119269; PubMed=10652302;
Kimberly W.T., Xia W., Rahmati T., Wolfe M.S., Selkoe D.J.;
"The transmembrane aspartates in presentlin 1 and 2 are obligatory
"The transmembrane aspartates in presentlin 1 and 2 are obligatory
"The transmembrane aspartates in presentlin 1 and 2 are obligatory
"The transmembrane aspartates in presentlin 1 and 2 are obligatory
"The transmembrane aspartates in presentlin 1 and 2 are obligatory
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Steiner H., Duff K., Capell A., Romig H., Grim M.G.
Hardy J., Yu X., Picciano M., Fechteler K., Citron
Pesold B., Keck S., Baader M., Tomita T., Iwatsubo
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AND C-TERRINAL FRAGENCY STOLEDLILL PROCESSING GENERALES N'TERMINAL AND C-TERRINAL FRAGENTS.

-I- PTM: PHOSPHORYLATED ON SERINE RESIDUES.

-I- DISEASE: DEFECTS IN PSEN2 ARE RESPONSIBLE FOR EARLY-ONSET AUTOSOMAL DOMINANT ALZHEIMER DISEASE (EOAD), WHICH IS THE MOST SEVERE FORM OF THE DISEASE, COMPLETE PENETRANCE, AN ONSET OCCURRING AS EARLY AS 30 YEARS OF AGE. THE SECOND FORM IS LATE-ONSET (LOAD) ALSO CALLED THE FAMILIAL ALZHEIMER DISEASE (FAD). AD IS A NEURODEGEMERATIVE DISORDER CHARACTERIZED BY PROGRESSIVE DEMENTIA, PARKINSONISM, AND DEPOSITION OF FIBRILLAR AMYLOID PROTEINS AS INTRANEURONAL NEUROFIBRILLARY TANGLES, EXTRACELLULAR AMYLOID PLAQUES AND VASCULAR AMYLOID DEPOSITS.

-I- DISEASE: THREE CAUSATIVE GENES HAVE BEEN IDENTIFIED THAT WHEN MUTATED LEAD TO PRESENILE ALZHEIMER'S DISEASE: APP (AMYLOID PRECURSOR PROTEIN GENE), PSEN1 AND PSEN2. THREE GENES ACCOUNT FOR HALF OF THE FAMILIES WITH AUTOSOMAL DOMINANT PRESENILE AD, WHICH REPRESENT APPROXIMATELY 10% OF THE WHOLE AD POPULATION. APOLIFOYING LOCKED
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MEDLINE-20100613; PubMed-10631141;
Finckh U., Mueller Thomsen T., Mann U., Eggers C., Marksteiner J.,
Meins W., Binetti G., Alberici A., Hock C., Nitsch R.M., Gal A.;
Meins W., Binetti G., Alberici and Hock C., Nitsch R.M., Gal A.;
"High prevalence of pathogenic mutations in patients with early-onset
"High prevalence of pathogenic mutations in patients with early-onset
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VARIANT
Transmembrane; Phosphorylation; Endoplasmic reticulum; Golgi stack; Alzheimer's disease; Disease mutation; Alternative splicing. CHAIN 1 297 PRESENILIN 2 NTF SUBUNIT (BY SIMILARITY). CHAIN 298 448 PRESENILIN 2 CTF SUBUNIT (BY SIMILARITY). DOMAIN 1 87 CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed.
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"A novel mutation in the predicted TM2 domain of the pr
in Spanish patient with late-onset Alzheimer's disease.
Neurogenetics 1:293-296(1998).
                                                                                                                                                                                                                                   PRINTS; PR01072;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FUNCTION: MAY PLAY A ROLE IN INTRACELLULAR SIGNALING AND GENE EXPRESSION OR IN LINKING CHROMATIN TO THE NUCLERA MEMBRANE. MA FUNCTION IN THE CYTOPLASMIC PARTITIONING OF PROTEINS. IS INVOIN THE PROTEOLYTICAL PROCESSING OF AMYLOID PRECURSOR PROTEIN
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15-JUL-1998 (Rel. 36, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Presenilin 2 (PS-2) (ALG-3) (Alzheimer disease PSEN2 OR PSNL2 OR ALG3 OR AD4H OR PS-2.
Mus musculus (Mouse).
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STRAIN=NIH Swiss;
Sahara N., Mori H.,
"Molecular cloning
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                          Vito P., Wolozin B., Ganjei J.K., Iwasaki "Requirement of the familial Alzheimer's apoptosis. Opposing effect of ALG-3."; J. Biol. Chem. 271:31025-31028(1996).
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of mouse presenilin 2 gene.";
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/FTId=VAR_009214.
N -> I (IN FAD: V
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P -> T (IN REF.
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A927EEC623468116 CRC64;
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V -> I (IN FAD; I
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M -> V (IN FAD;
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Matches 28
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Science 271:521-525(1956).

INTRACELLULAR SIGNALING AND GENE EXPRESSION OR IN LINKING CHROMATIN TO THE NUCLEAR MEMBRANE. MAY FUNCTION IN THE CYTOPLASMIC PARTITIONING OF PROTEINS (BY SIMILARITY).

SUBUNIT: PREDOMINANTLY HETERODIMER OF A N-TERMINAL (NTF) AND A C-TERMINAL (CTF) ENDOPROTECLYTICAL FRAGMENT (BY SIMILARITY).

TERMINAL (CCTF) ENDOPROTECLYTICAL FRAGMENT (BY SIMILARITY).

SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN. GOLGI AND ENDOPLASMIC RETICULUM (BY SIMILARITY).

TISSUE SPECIFICITY: UBIQUITOUSLY EXPRESSED, MOSTLY IN THE LIVER.

TO TISSUE SPECIFICITY: UBIQUITOUSLY EXPRESSED, MOSTLY IN THE LIVER.

TO THE PHM: PHOSPHORYLATED ON SERINE RESIDUES (BY SIMILARITY).
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"Interfering with apoptosis: Ca(2+)-binding
Alzheimer's disease gene ALG-3.";
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U57325; AAC53311.1;
AF038935; AAB92660.1;
U49111; AAC52935.1;
                                          ISVYDLVAVLCPKGPLRMLVETAQERNE
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STANDARD;
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CYTOPLASMIC
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POTENTIAL.
                                                                                    Score 28;
Pred. No.
                                                                                                                                                                                                                                                               n; Endoplasmic reticulum; PRESENILIN 2 NTF SUBUNIT PRESENILIN 2 CTF SUBUNIT. CYTOPLASMIC (POTENTIAL).
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CYTOPLASMIC (POTENTIAL)
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 PRT;
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O88777; O35546; O08947;
15-JUL-1999 (Rel. 38, Created)
15-JUL-1999 (Rel. 38, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Presenilin 2 (PS-2).
PSEN2 OR PSUL2 OR PS2.
Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebr; Mammalia; Eutheria; Rodentia; Sciurognathi; Mur:
NCBI_TaxID-10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tanahashi H., Tabira T.;

"Cloning of the cDNA encoding rat presenilin-2.";

Biochim. Biophys. Acta 1396:259-262(1998).

-i- FUNCTION: MAY PLAY A ROLE IN INTRACELLULAR SIGNALING AND GEN EXPRESSION OR IN LINKING CHROMATIN TO THE NUCLEAR MEMBRANE.
PFUJUOU,
S; PROJOOZ; PRESENILIN.
S; PRO1072; PRESENILIN.
S; PRO1072; PRESENILIN.
S; PRO1072; PRESENILIN.
S; PRO1072; PRESENILIN.
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INSNEM 142 159 PO'
ANIN 160 166 CY.
ANINEM 160 166 CY.
ANINEM 160 202 LU.
RANGHEM 203 219 PC.
INAIN 203 219 PC.
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INAIN 203 246
DOMAIN 230 246
DOMAIN 230 246
TRANSMEM 253 269
TRANSMEM 253 269
TRANSMEM 253 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; X99267; CAA67663.1; -. EMBL; D83700; BAA22832.1; -. EMBL; AB004454; BAA20406.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      modified and this statement is not removed. Usage by and foentities requires a license agreement (See http://www.isb-sib.or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN=Wistar; TISSUE=Brain; MEDLINE=98207716; PubMed=954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN-Wistar; TIS MEDLINE-97473536;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the European Bioinformatics Institute. There are no rest
use by non-profit institutions as long as its content
modified and this statement is not removed. Usage by an
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"Cloning of cDNA and expression of the gene encoding rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
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SUBUNIT: PREDOMINANTLY HETERODIMER OF A N-TERMINAL (NTF)
C-TERMINAL (CTF) ENDOPROTEOLYTICAL FRAGMENT (BY SIMILARIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUBCELLULAR LOCATION: INTEGRAL MEMBRANE ENDOPLASMIC RETICULUM (BY SIMILARITY).
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(JUL-1996) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IPR001108; Presenilin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ., Mercken M., Nakazato
Takashima A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE-Brain;
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16-OCT-2001 (Rel. 40, Last sequence of the country of the country
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NCBI_TaxID=9913;
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Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
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                                                                                                                                                                                                                                                                                               PF01080;
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RESULT 12
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"Cloning of Xenopus presenilin-alpha and beta cDNAs and their differential expression in ogenesis and embryogenesis.";

Biochem. Biophys. Res. Commun..231:392-396(1997).

-i- FUNCTION: MAY PLAY A ROLE IN NEARTIVE REGULATION OF APOPTOTIC CASCADES DURING OOGENESIS, AND EMBRYOGENESIS, AND IN DEVELOPMENTALLY MATURED TISSUES SUCH AS BRAIN TISSUE.

-i- SUBCELLULAR LOCATION: Integral membrane protein (By similarity).

-i- TISSUE SPECIFICITY: HIGHEST EXPRESSION IN OVARIES AND TO A LESSER EXTENT IN KIDNEY, BRAIN, EYE AND LUNG. WEAK EXPRESSION IN TESTIS, INTEGRAL INTEGRAL AND HEART. PRESENT IN TRACE AMOUNTS IN SKELETAL MITTERSTINE, LIVER AND HEART. PRESENT IN TRACE AMOUNTS IN SKELETAL
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O12977;
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15-JUL-1999 (Rel.
15-JUL-1999 (Rel.
15-JUL-1999 (Rel.
                                                                                                                                                                                                             between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                   TRANSMEN
                                                                                                              Transmembrane;
TRANSMEM 9
                                                                                                                                    Pfam; PF01080; Presenilin; 1 PRINTS; PR01072; PRESENILIN
                                                                                                                                                                                          EMBL; D84428;
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NCBI_TaxID=8355;
                                                                                                                                                                           MEROPS; A22.
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                                                                                                                                                                 InterPro;
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SEQUENCE
                                                                                                                                       Hendriks L. Van Broeckhoven C., Gonzaiez-L
"Identification of a Drosophila presenilin
alternatively spliced forms.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Drosophila melanogaster (Fruit fly).

Eukaryota; Metazoa; Arthropoda; Mandibulata; Pancrustacea; Hexapoda;
Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera;
Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.

NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PSN_DROME STANDARD; PRT; 541 AA. 002194; 002395; 076802; 09V3L9; 09V80; Q9V3S1; 15-JUL-1999 (Rel. 38, Created) 15-JUL-1999 (Rel. 38, Last sequence update) 15-JUL-1999 (Rel. 41, Last annotation update) Presenilin homolog (DPS) (DMPS). PSN OR PS OR CG18803/CG5868.
 "Guo Y., Livne-Bar I., Zhou L., Boulianne G.L.,
"Drosphila presenilin is required for neurona
affects notch subcellular localization and sig
J. Neurosci. 19:8435-8442(1999).
                                                                                                                                                                                                                                                                                              "Neurogenic phenotypes and altered Notch processing Presenilin mutants."; Nature 398:525-529(1999).
                                                                            SEQUENCE FROM N.A. MEDLINE=99423881;
                                                                                                                                                                                                                                              STRAIN-Canton-S
                                                                                                                                                                                                                                                                                                                                                      Υе Υ.,
                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-99221488;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A. (LONG AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NeuroReport 8:665-668(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hong C.-S., Koo E.H.;
"Isolation and characterization of Drosophila presentiin homolog.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN=Canton-S; TISSUE=Embryo, MEDLINE=97260623; PubMed=910674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Boullanne G.L., Livne-Bar I., Humphreys Rogaev E., St George-Hyslop P.H.; "Cloning and characterization of the Dro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE-97285868;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.,
                                                                                                                                                                                                    Marfany G., Del-Favero J.,
                                                                                                                                                                                                                       MEDLINE=98331525; PubMed=9666900;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NeuroReport 8:1025-1029(1997).
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                                                                                                                                 Neurogenet.
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Dev. 79:199-211(1998).
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27; Conser
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449
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                                                                                                                                                                                                                                                                                                                                                  Pubmed-10206647;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GE, SUBCELLULAR LOCATION, PubMed=10349633;
                                                                      PubMed=10493744;
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50274 MW;
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                   neuronal differentiation
and signaling.";
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D ALTERNATIVE SPLICING.
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     Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D. Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R. George R.A., Lewis S.E., Richards S., Ashburner M., Henderson Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X., Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffel
                                                                      EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D., Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G., Wan J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D.,
                                                       EMBL;
                                                                                                                                                              modified and this statement is not removed.
entities requires a license agreement (See
                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
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SEQUENCE FROM N.A. (LONG AND
STRAIN=Berkeley;
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                                                                                                                                                                                                                                                                                                                                                               PUNCTION: MAY PLAY AN IMPORTANT ROLE IN THE PATTERNING OF THE OPTIC LOBES. PROTEIN MAY ACT, TOGETHER WITH NOTCH, TO SPECIFY CELL FATES THROUGHOUT DEVELOPMENT.

SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN. GOLGI AND ENDOPLASMIC RETICULUM (BY SIMILARITY).

ALTERNATIVE PRODUCTS: 2 ISOFORMS; A LONG FORM (SHOWN HERE) AND SHORT FORM/PS-D; ARE PRODUCED BY ALTERNATIVE SPLICING.
TISSUE SPECIFICITY: MATERNALLY EXPRESSED IN NURSE AND FOLLICLE CELLS. IN EARLY EMBRYOS, EXPRESSED IN ALL OR MOST CELLS AND LATINGEBASES IN CNS AND EPIDERMAL TISSUES. IN LARVAE, EXPRESSION I SEEN IN ALL OR MOST CELLS AND LATINGEBASES. IN CAS AND EPIDERMAL TISSUES. IN LARVAE, EXPRESSION I SEEN IN ALL OR MOST CELLS AND LATINGEBASES.
                                                                                                                                                                                                                                                                                          EXPRESSION IS SEEN IN EYE DISK AND BRAIN, DEVELOPMENTAL STAGE: EXPRESSED BOTH MATERNALLY THROUGHOUT DEVELOPMENT.
SIMILARITY: BELONGS TO THE PRESENTLIN FAMILY.
U77934; AAB61139.1;

U78084; AAB53369.1;

; AF084184; AAC33129.1;

AF017024; AAC01610.1;

; AF017025; AAD01611.1;

; AF017026; AAD01612.1;
                                                                                                                                               equires a license agreement (Semail to license@isb-sib.ch).
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Matches
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01-QCT-1996 (Rel. 34, Created)
15-JUN-2002 (Rel. 41, Last seque
15-JUN-2002 (Rel. 41, Last annot
Presenilin sel-12.
SEL-12 OR F35H12.3.
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Levitan D.
                                                                                                                             STRAIN=Bristol N2;
MEDLINE=20372200; Puk
Wittenburg N., Eimer
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CONFLICT
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TRANSMEM
STRAIN-Bristol N2;
Nelson J., Gattung
                                                                                                                                                                                                                                                                 Nature
[2]
                                                                                                                                                                                                                                                                             "Facilitation of lin-12-mediated signalling by sel-12, Caenorhabditis elegans S182 Alzheimer's disease gene." Nature 377:351-354(1995).
                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A., AND VARIANT S
STRAIN-Bristol N2;
MEDLINE-96032531; PubMed-7566091;
                                                                                                                                                                                                                                                                                                                                                                                                                             Caenorhabditis elegans.
Eukaryota; Metazoa; Nem
Rhabditidae; Peloderina
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                                                                                                              Baumeister R.;
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AF093402;
AE003591;
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22; Conserv
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541 AA;
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AAD52708.1;
-; NOT_ANNOT
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Caenorhabditis.
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annotation update)
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Pred. No.
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A3B3D54348A2C03F
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F CRC64;
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Best Local (
Presentati ("""" AT1G08700 OR F22013.18.
AT1G08700 OR F22013.18.
Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Rosid
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                                                                    PSNH_ARATH STANDARD; PRT; 4
064668;
15-JUL-1999 (Rel. 38, Created)
15-JUL-1999 (Rel. 38, Last sequence up
16-OCT-2001 (Rel. 40, Last annotation
Presentilin homolog.
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InterPro; IPRO01686; Nema_presen
InterPro; IPRO01108; Presenilin.
Pfam; PF01080; Presenilin; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.

-:- FUNCTION: MAY FACILITATE LIN-12 MEDIATED RECEPTION OF INTERCELLULAR SIGNALS. IT MIGHT BE DIRECTLY INVOLVED IN I MEDIATED RECEPTION, FUNCTIONING AS A CO-RECEPTOR OR AS A
                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRINTS; PR01072; PRINTS; PR01075;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Transmembrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEROPS; A22.UPW;
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                                                                                                                                                                                                                                                                             Local
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SIMILARITY: BELONGS TO THE PRESENILIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ween the Swiss Institute. The European Bioinformatics Institute. The European Broinformatics as long to non-profit institutions as long to non-profit institutions as long to non-profit institutions.
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                                                                                                                                                                                                                                                                   18;
                                                                                                                                                                                                                                                                                Similarity
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POTENTIAL.

POTENTIAL.

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C -> S (IN AR131; EGG-LAYING-DEFECTIVE).

PISIFSCLIFYECTRWILTPFVTQVSQKCLLY -> QFPFS

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PISIF I).

IIS (IN REF. 1).

MW; 37ADBC124E16429C CRC64;
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Pred. No.
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2e-09;
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                  Rosidae;
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RA Buehler E., Chan A., Chao Q., Chen H., Cheuk R.F., Chin C.W.,
RA Chung M.K., Conn L., Conway A.B., Conway A.R., Creasy T.H., Dewar K.,
RA Chung M.K., Conn L., Conway A.B., Conway A.R., Creasy T.H., Dewar K.,
RA Chung P., Etgu P., Feldblyum T.V., Feng J.-D., Fong B., Fujii C.Y.,
RA Gill J.E., Goldsmith A.D., Haas B., Hansen N.F., Hughes B., Huizar L.,
RA Hunter J.L., Jenkins J., Johnson-Hopson C., Khan S., Khaykin E.,
RA Hunter J.L., Jenkins J., Johnson-Hopson C., Khan S., Khaykin E.,
RA Hunter J.L., Jenkins J., Johnson-Hopson C., Khan S., Khaykin E.,
RA Hunter J.L., Jenkins J., Johnson-Hopson C., Khan S., Khaykin E.,
RA Kim C.J., Koo H.L., Kremenetskaia I., Kurtz D.B., Kwan A., Liam B.,
RA Langin-Hooper S., Lee A., Lee J.M., Lenz C.A., Li J.H., Li Y.-P.,
RA Langin-Hooper S., Liu Z.A., Luros J.S., Maiti R., Marziali A.,
RA Militscher J., Miranda M., Nguyen M., Nierman M.C., Osborne B.I.,
RA Alitischer J., Miranda M., Nguyen M., Nierman M.C., Osborne B.I.,
RA Pai G., Peterson J., Pham P.K., Rizzo M., Rooney T., Rowley D.,
RA Pai G., Peterson J., Pham P.K., Rizzo M., Sonthwick A.M.,
RA Sun H., Tallon L.J., Tambunga G., Toriumi M.J., Town C.D.,
RA Wu D., Yu G., Fraser C.M., Venter J.C., Davis R.W.;
"Sequence and analysis of chromosome 1 of the plant Arabidopsis
RT Thaliana.";
                                                                                                                                                                                                                                                                                              Query
Best L
                                                                                                                                                                                                                                                                               Matches
                                         YGBQ ECOLI STANDARD; PRT;
Q46894;
15-JUL-1998 (Rel. 36, Created)
15-JUL-1998 (Rel. 36, Last sequence
16-OCT-2001 (Rel. 40, Last annotati
Hypothetical protein ygbQ.
YGBQ OR B2748 OR Z4056 OR ECS3602.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nature 408:816-820(2000).
-!- SUBCELLULAR LOCATION: Integral membrane protein
-!- SIMILARITY: BELONGS TO THE PRESENILIN FAMILY.
              Escherichia coli, and Escherichia coli 0157:H7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Transmembrane
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[1]
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                                                                                                                                                                                                                                                                                              Local
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                                                                           Last annotation
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gamma subdivision; Enterobacteriaceae;
                                                                                        sequence
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Pred. No.
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                                                                                          update)
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RESULT 17
22P1_RAT
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Best Local
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MEDLINE-21156231; PubMed-11258796;

Hayashi T., Makino K., Ohnishi M., Kurokawa K., Ishii K., Yokoya Hayashi T., Makino K., Ohnishi M., Kurokawa C., Tanaka M., Tobe T Iida T., Takami H., Honda T., Sasakawa C., Ogasawara N., Yasunag Kuhara S., Shiba T., Hattori M., Shinagawa H., Kuhara S., Shiba T., Hattori M., Shinagawa H., Complete genome sequence of enterohemorrhagic Escherichia coli 0157:H7 and genomic comparison with a laboratory strain K-12.", DNA Res. 8:11-22(2001).
                              22P1_RAT STANDARD; PRT; 176 AA.

P222B2, Q63674;

01-AUG-1991 (Rel. 19, Created)
01-AUG-1991 (Rel. 19, Last sequence update)
16-OCT 2001 (Rel. 40, Last annotation update)
Cystatin related protein 1 precursor (CRP-1) (Prostatic 22 kDa glycoprotein P22K16/P22K20) (Androgen regulated 20 kDa protein)
                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; U29579; AAA69258.1; -. EMBL; AE000358; AAC75790.1; -. EMBL; AE005502; AAG57855.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. The state content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Welch R.A., Blattner F.R., "Genome sequence of enterohaemorrhagic Nature 409:529-533(2001).
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 Rattus
                                                                                                                                                                                                                                                                                                                                                            Hypothetical protein; Complete SEQUENCE 103 AA; 11622 MW;
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STRAIN=0157:H7 / E
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PubMed=11206551;
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alternative splicing cause size heterogeneity of the messenger ribonucleic acids encoding cystatin-related protein."; Endocrinology 131:2496-2502(1992).
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Ho K.-C., Snoek R., Quarmby V. V. Wilson E.M., French P. Primarv.
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or send a
                                                                                                                                        EMBL;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "A complex response element in intron 1 of the androgen-regulated 20-kba protein gene displays cell type-dependent androgen recepto specificity.";
J. Biol. Chem. 268:27226-27235(1993).
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                                                                           LL; M58167; AAA63498.1; -. 2138167; AAA63498.1; -. 214593; CAA79384.1; -. 248988; AAA12401.1; -. 248989; AAA826027.1; -. 248454; AAA440732.1; -. 248454; AAA440732.1; -. 248454; AAA440732.1; -. 248454; AAA460732.1; -. 24845454; AAA460732.1; -. 248454545454; AAA6607545454; AAA660754545
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INDUCTION: BY ANDROGENS
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-specific expression and androgen regulation of different
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28:6367-6373(1989).
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4:657-667(1990).
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NGN2_MOUSE STANDARD: PRT; 2
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15-DEC-1998 (Rel. 37, Created)
15-DEC-1998 (Rel. 37, Last sequence up
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                  the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                         Simmons A.D., Horton S., Abney A.L., Johnson J.E.;
"Neurogenin 2 expression in ventral and dorsal spinal
progenitor cells is regulated by distinct enhancers.";
Submitted (SEP-2000) to the EMBL/GenBank/DDBJ database
-!- FUNCTION: INVOLVED IN NEUROGENESIS.
                                                                                                                                                                                                                          Dev.
                                                                                                                                                                                                                                                    MEDLINE=97105839; PubMed=8948587; Gradwohl G., Fode C., Guillemot F.; "Restricted expression of a novel murine "Restricted expression of a novel murine"
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                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                    in undifferentiated neural precursors."; Dev. Biol. 180:227-241(1996).
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                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=97153565; PubMed=9000438;
                                                                                                                                                                                                                                                                                                                                                                                                                                               Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=10090
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                     SUBCELLULAR LOCATION: Nuclear (Potential). SIMILARITY: BELONGS TO THE BASIC HELIX-LOO TRANSCRIPTION FACTORS. "ATONAL" SUBFAMILY.
                                                                                                                                  SUBUNIT: EFFICIENT
                                                                                                                      BHLH PROTEIN
                                                                SWISS-PROT entry is copyright.
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                                                   the Swiss Institute of
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license@isb-sib.ch).
           license agreement
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Rodentia;
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Sciurognathi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3D5355EC56E3CBA0 CRC64;
                                                                                                                                                                                                                                                                                                                                 atonal-related bHLH transcription neuronal determination genes that neity in the developing CNS and PN
                                                   Bioinformatics
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4) (Helix-loop-helix protein
                                                                                                HELIX-LOOP-HELIX
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          (See http://www.isb-sib.ch/announce/
                             There are no rest
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                                                                                                                                                                                                                                                                                                                                                                                                                        Vertebrata; Euteleostomi;
thi; Muridae; Murinae; Mus
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RESULT 19

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Best Local
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Pfam; PF00278; Orn_DAP_Arg_deC; 1.

Pfam; PF002784; Orn_Arg_deC_N; 1.

PRINTS; PR01179; ODADCRBXLASE.

PROSITE; P801878; ODR_DC_2_1; 1.

PROSITE; P800879; ODR_DC_2_1; 1.

PROSITE; P800879; ODR_DC_2_1; 1.

PROSITE; P800879; ODR_DC_2_1; 1.

PROSITE; P800879; ODR_DC_2_1; 1.

PROSITE; PS00879; ODR_DC_2_1; 1.

PRO
                                                                                                                                                                                                                                                                                                                                                                                                                                           the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as list content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Leishmania donovani.
Eukaryota; Euglenozoa;
NCBI_TaxID=5661;
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01-AUG-1992 (Rel. 23,
01-JUL-1993 (Rel. 26,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR001092; HLH_basic
Pfam; PF00010; HLH; 1.
SMART; SM00353; HLH; 1.
                                                                                                                                                                                                                                                                                                PIR; A42322; A42322.
PIR; S27821; S27821.
HSSP; P00860; 7ODC.
                                                                                                                                                                                                                                                                                                                                                                                          EMBL; M81192; AAA29259.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-92129311; PubMed-1339439;
Hanson S.S., Adelman J., Ullman E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ornithine decarboxylase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DCOR_LEIDO P27116;
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DNA_BIND 113 124 BASIC DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; U76207; AAC53028.1; -. EMBL; Y07621; CAAG40769.1; -. EMBL; AF303001; AAG40769.1; -. MGD; MGI:109619; Neurog2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        *Amplification and molecular cloning of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     38
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SWISS-PROT entry is copyright. It is produced through a collaboration -
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8; Conser
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se (EC 4.1.1.17)
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   EBDF14F791EC572D CRC64;
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DE MAILLIG
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                                                EMBL; M60040; AAA68883.1; -.
EMBL; M59253; AAA37004.1; -.
EMBL; M17897; AAA37006.1; -.
EMBL; M17897; DVHYIC.
InterPro; IPR003593; AAA_ATPase.
InterPro; IPR003593; AAA_Transportr.
InterPro; IPR001409; ABC_transportr.
InterPro; IPR001140; ABCTranprtTM.
Pfam; PF00064; ABC_membrane; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Simultaneous expression of two P-glycoprotein genes in drug-sensitive Chinese hamster ovary cells."; Mol. Cell. Biol. 7:4075-4081(1987).
-i- FUNCTION: ENERGY DEPENDENT EFFLUX PUMP RESPONSIBLE FOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cricetulus griseus (Chinese hamster).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;
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01-NOV-1991 (Rel. 20, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Multidrug resistance protein 1 (P-glycoprotein 1).
ABCB1 OR PGY1 OR PGP1.
                                                                                                                                                                                                                                                                                                                                                           the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed
                                                                                                                                                                                                                                                                                                                or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDIINE-91154265; PubMed-1671863;
Devine S.E., Hussain A., Davide J.P., M
"Full length and alternatively spliced
resistant Chinese hamster lung cells.";
J. Biol. Chem. 266:4545-4555(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
MEDLINE=92135896; PubMed=1685679;
Endicott J.A., Sarangi F., Ling V.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cricetulus.
                                                                                                                                                                                                                                                                                                                                     entities requires a license agreement (See http://www.isb-sib.ch/announce/
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SUBCELLULAR LOCATION: Integral membrane protein.
MISCELLANEOUS: PGP ISOFORMS DIFFER IN THEIR DRUG TRANSPORT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIMILARITY: BELONGS TO THE ABC TRANSPORTER FAMILY. MDR SUBFAMILY.
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                 Hsu S.I.H., Lothstein L., Horwitz S.B.;

"Differential overexpression of three mdr gene family members imultidrug-resistant J774.2 mouse cells. Evidence that distinct glycoprotein precursors are encoded by unique mdr genes.";

J. Biol. Chem. 264:12053-12062(1989).
                                                                                                                                  multidrug-resistant J774.2 cells.";
Mol. Cell. Biol. 10:3596-3606(1990).

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ATP-binding;
Multigene fam
                                                                                          STRAIN=BALB/c;
MEDLINE=89308614; PubMed=2473069;
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MEDLINE=90205845; PubMed=1969610;
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01-APR-1993 (Rel. 25, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
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PROSITE; PS00211; ABC_TRANSPORTER;
ATP-binding; Glycoprotein; Transme
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Pfam; PF00664; ABC_membrane; 2
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InterPro; IPR003593; AAA_ATPase.
InterPro; IPR003439; ABC_transportr
InterPro; IPR001140; ABCtranprtrTM.
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SUBCELLAULAR LOCATION: Integral membrane protecin.
MISCELLANEOUS: IN MOUSE THE MDR GENE FAMILY INCLUDES THREE OR MOR
RELATED BUT DISTINCT CELLULAR GENES.
SIMILARITY: BELONGS TO THE ABC TRANSPORTER FAMILY. MDR SUBFAMILY.
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Higuchi S., Nakamura Y.;
Higuchi S., Nakamura Y.;
"Three hundred twenty-six genetic variations members of APP-binding cassette, subfamily B Japanese population.";
Japanese population.";
J. Hum. Genet. 47:38-50(2002).
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MEDLINE-90094448; PubMed-1967175;
Chen C.-J., Clark D.P., Ueda K.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Genomic organization of the human and origin of P-glycoproteins."; J. Biol. Chem. 265:506-514(1990).
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
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Pastan I., Uedak K.;
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the mdrl (P-glycoprotein) gene from multidrug-resistant human
                                                           European
                                                                                                                              SIMILARITY: BELONGS TO THE ABC TRANSPORTER FAMILY. MDR SUBFAMILY. DATABASE: NAME=Atlas Genet. Cytogenet. Oncol. Haematol.; www-"http://www.infoblogen.fr/services/chromcancer/Genes/PGY1ID105.html".
                                                                                                                                                                                                         FUNCTION: ENERGY-DEPENDENT EFFLUX PUMP RESPONSIBLE DRUG ACCUMULATION IN MULTIDRUG-RESISTANT CELLS. SUBCELLULAR LOCATION: Integral membrane protein. TISSUE SPECIFICITY: EXPRESSED IN LIVER, KIDNEY, SMA
                                                                                                                                                                                              AND BRAIN.
                       SWISS-PROT entry is copyright. It is produced through a collaboration een the Swiss Institute of Bioinformatics and the EMBL outstation - European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way fied and this statement is not removed. Usage by and for commercial
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RESULT 24
TEMB_RANTE
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                                                                                                                       Best Local
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Best Local Similarity
                                                                                                              Matches
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                                                                                                                                                    CHAIN
MOD_RES
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CONFLICT
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                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its most by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
 P79874;
01-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P79876; P56922;
01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence up
16-OCT-2001 (Rel. 40, Last annotation
                     TEMB_RANTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rana temporaria (European common frog).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Amphibia; Batrachia; Anura; Neobatrachia; Ranoidea;
                                                                                                                                                                                   PROPEP
                                                                                                                                                                                            SIGNAL
                                                                                                                                                                                                       Amphibian
                                                                                                                                                                                                                                     EMBL; Y09394; CAA70563.1; -
                                                                                                                                                                                                                                                                                                                                                                                      "Temporins, antimicrobial temporaria.";
                                                                                                                                                                                                                                                                                                                                                                                                           Barra D.
                                                                                                                                                                                                                                                                                                                                                                                                                    Simmaco M., Mignogna
                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TEMH_RANTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                            InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=97175050;
                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE-Skin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Temporin H precursor.
                                                                                         170 SLLLLFF 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     420 LTLLLLAI
                                                                       7
                                                                                                                                                                                                                                                                                                                                              FUNCTION: HAS NO ANTIBACTERIAL ACTIVITY. SUBCELLULAR LOCATION: Secreted. SIMILARITY: BELONGS TO THE BREVININ/ESCU
                                                                     SLLLLFF
                                                                                                                                                                                                                                                                                                                                      FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LTLLLAI 864
                                                                                                                                                                                                                                                                                                                                                                              J. Biochem.
                                                                                                                                                                                                                PF03032; Brevenin;
                                                                                                            Similarity 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                       skin;
                                                                                                                                                                                                                          IPR004275; Brevenin.
                                                                                                                                                     58
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                                                                                                              Conservative
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                                                                       13
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23
47
56
                                                                                                                                                    AA;
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                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                     Amidation; Signal; Multigene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ã,
                                                                                                                                                                                                                                                                                                                                                                              242:788-792(1996)
  35,
                                                                                                                                                                                                                                                                                                                                                                                                                              PubMed=9022710;
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336
412
438
438
141462
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                                                                                                                       1.5%;
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56
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   Created)
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                                                                                                                                                                                                                                                                                                                                                                                                                    Canofeni S., Miele
                                                                                                                                                                                                                                                                                                                                                                                                peptides
                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            G -> V (IN REF. 1 AND 3).
MISSING (IN REF. 3).
G -> A (IN REF. 3).
Q -> S (IN REF. 3).
MW; AB1C279531F43675 CRC64;
                                                                                                                       Score 7;
Pred. No
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 8;
                                                                                                                                                    AMIDATION (G-57 PROVIDE AMIDE GROUP) 684AECB0451E5E81 CRC64;
                                                                                                                                                                        TEMPORIN H
                                                                                                                                                                                            POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                             Mismatches
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                                                                                                                       No.
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                                                                                                                  DB
15;
                     61
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                                                                                                                                                                                                                                                                                                                                                                                                                                                AND SYNTHESIS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
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                                                                                                                                                                                                                                                                                                                                                                                                European red
                                                                                                                                                                                                     family
                                                                                                            0;
                                                                                                                                Length 58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 1280;
                                                                                                                                                                                                                                                                                                                                                                                                                    Mangoni M.L.,
                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Euteleostomi;
Ranidae; Rana
                                                                                                                                                                                                                                                                                                                                                                                                                                                 OF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 47-56
                                                                                                                                                                                                                                                                                                                                                                                                frog
                                                                                                            0;
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                                                                                                                                                                                                                                                                                                                                                                                                 Rana
                                                                                                            Gaps
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RESULT 25
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Best Local S
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SEQUENCE
           Eur. J. Biochem. 242:788-792(1996).
-!- FUNCTION: HAS ANTIBACTERIAL ACTIVITY
GRAM-POSITIVE BACTERIA.
                                                                                                                                                                                    TEMG_RANTE STANDARD: PRT; P79875; 01-NOV-1997 (Rel. 35, Created) 01-NOV-1997 (Rel. 35, Last sequence up 16-OCT-2001 (Rel. 40, Last annotation Temporin G precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                            PROPEP
CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Amphibia; Batrachia; Anura; Neobatrachia; Ranoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rana temporaria (European com
Eukaryota; Metazoa; Chordata;
Amphibia; Batrachia; Anura; N
                                                                    Barra D.
                                                                              Simmaco M., Mignogna
                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                            Rana temporaria (European common frog).
                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Simmaco M.,
                                            temporaria."
                                                         "Temporins, antimicrobial
                                                                                            MEDLINE=97175050;
                                                                                                        TISSUE-Skin
                                                                                                                                         NCBI_TaxID=8407;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Amphibian skin; Antibiotic; Amidation; Signal; Multigene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; Y09393; CAA70562.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       temporaria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Barra D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-97175050;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -!- FUNCTION: HAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Temporins,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   rissue=skin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=8407;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Temporin B precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-NOV-1997 (Rel. 35, 16-OCT-2001 (Rel. 40,
                                                                                                                                                                                                                                                                                                                                  170 SLLLLFF 176
                                                                                                                                                                                                                                                                                                             7
SUBCELLULAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUBCELLULAR LOCATION: SIMILARITY: BELONGS TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FAMILY
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                                                                                                                                                                                                                                                                                                             SLLLLFF 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             J. Biochem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PF03032; Brevenin;
                                                                                                                                                                                                                                                                                                                                                      7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IPR004275; Brevenin.
                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  antimicrobial peptides from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mignogna
                                                                                                                                                                                                                                                                                                                                                                                                                   23
47
59
                                                                                                                                                                                                                                                                                                                                                                                                      AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            242:788-792(1996).
                                                                              PubMed=9022710;
gna G., Canofeni
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ANTIBACTERIAL ACTIVITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PubMed=9022710;
                                                                                                                                                                                                                                                                                                                                                                                                      7101 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE OF 47-59, AND
                                                                                                                                                                                                                                                                                                                                                                   1.5%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             opean common frog).
Chordata; Craniata; Vertebrata;
Anura; Neobatrachia; Ranoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                    .0%;
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                                                        peptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Secreted
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                                                                                                                                                                                                                                                                                                                                                        Score 7; DB 1
Pred. No. 16;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                    TEMPORIN B.
AMIDATION (G-60
B73f75689C300357
                                                                                                                                                                                                                                                                                                                                                                                                                                                    POTENTIAL
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                                                         from
                                                                                                                                                                                                              update)
                                                                               Miele
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                                                         the
                       AGAINST
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                                                        European
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                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                               Mangoni M.L.,
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                       GRAM-NEGATIVE AND
                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                     Euteleostomi;
Ranidae; Rana
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                                                        frog
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Best Local S
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                                                                                                                                                                                                         Biochem.
                                                                                                                                                                                                                                                                                                                                                                                                                        P80399; Q91329;
01-NOV-1995 (Rel. 32, Created)
01-NOV-1997 (Rel. 35, Last sequence up
16-OCT-2001 (Rel. 40, Last annotation
Gaegurin-5 precursor.
                                                      This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on it use by non-profit institutions as long as its content is in no was use by non-profit institutions as long as its content.
                                                                                                                                                                                                                                                                                                                                                                                         Rana rugosa (Wrinkled frog).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Amphibia; Batrachia; Anura; Neobatrachia; Ranoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAE5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This
 EMBL; U22393;
                      or send an email to license@isb-sib.ch).
                                   modified and this statement is not removed. entities requires a license agreement (See
                                                                                                                                               -
                                                                                                                                                       ++
                                                                                                                                                                                                                                          MEDLINE=95091844; PubMed=7999137;
Park J.M., Jung J.-E., Lee B.J.;
"Antimicrobial peptides from the skin of a Korean
                                                                                                                                                                                                                                                                                          SEQUENCE OF 42-65
                                                                                                                                                                                                                                                                                                                  Park J.M., Lee J.Y., Submitted (MAY-1995)
                                                                                                                                                                                                                                                                                                                                          TISSUE-Skin;
                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RANRU
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pfam; PF03032; Brevenin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; Y09395; CAA70564.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                 TISSUE-Skin;
                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=8410;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROPEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <del>-</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           170 SLLLLFF 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ween the Swiss-PROT entry is copyright. It is produced through a collaborative meen the Swiss Institute of Bioinformatics and the EMBL outstative propean Bioinformatics Institute. There are no restrictions on by non-profit institutions as long as its content is in no lifted and this statement is not removed. Usage by and for commendations are supported by an experimental commendations.
                                                                                                                               SUBCELLULAR LOCATION:
TISSUE SPECIFICITY: SI
SIMILARITY: BELONGS TO
                                                                                                                                                                            FUNCTION: HAS A NON-HEMOLYTIC ACTIVIA ACTIVITY AGAINST BOTH GRAM-POSITIVE FUNGI AND PROTOZOA.
                                                                                                                                                                       SUBUNIT: MONOMER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FAMILY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RANRU
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7; Conserv
                                                                                                                                                                                                                  Biophys.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             skin;
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23
47
59
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
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                                                                                                                                                                                                       NON-HEMOLYTIC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%;
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                                                                                                                                 SKIN.
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                                                                                                                              THE BREVININ/ESCULENTIN/GAEGURIN/RUGOSIN
                                                                                                                                                                                                                                                                                                                  .M., Lee B.J.;
EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 7; DB 1
Pred. No. 16;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
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POTENTIAL
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AMIDATION (G-60 F
EDF5A8BC79DFD9F2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     POTENTIAL.
                                                                                                                                                                                       205:948-954(1994).
TIC ACTIVITY. HAS A BROAD SPECTRUM OF
-POSITIVE AND GRAM-NEGATIVE BACTERIA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BREVININ/ESCULENTIN/GAEGURIN/RUGOSIN
                                                                                                                                                                                                                                                                                                                                                                                                                                       update)
on update)
                                  (See http://www.isb-sib.ch/announce/
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Ranidae; Rana
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RESULT 27
RLXN_RANCA
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DISULFID
CONFLICT
SEQUENCE
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SIGNAL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               study of its interaction with micelles.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rana catesbeiana (Bull frog).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Amphlbia; Batrachia; Anura; Neobatrachia; Ranoldea;
NCBI_TaxID-8400;
                                                                       PIR; A53744; A53744.
InterPro; IPR004275; Brevenin.
Pfam; PF03032; Brevenin; 1.
                                                                                                                                                                                                       or send an
                                                                                                                                                                                                                                                  use by non-profit institutions as long modified and this statement is not removed
                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Entre European Bioinformatics Institute. There are no restricted the succession of the succession
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ----
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polymyxin.";
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                          Amphibian skin; Antibiotic; Hemolysis; SIGNAL 1 20 POTENTIAL
                                                                                                                                                  EMBL;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Vignal E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-98237592;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Clark D.P., Durell S., Maloy W.L., Zasloff M.; "Ranalexin. A novel antimicrobial peptide from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ranalexin
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Pfam; PF03032; Brevenin;
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II. Biochem. 253:221-228(1998).

FUNCTION: POTENT MICROBICTDAL ACTIVITY, A
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                                                                                                                                                                                                                                                                                                                                                                                                                             DEVELOPMENTAL STAGE: EXPRESSION STARTS AT METAMORPHOSIS AND CONTINUES INTO ADULTHOOD.
SIMILARITY: BELONGS TO THE BREVININ/ESCULENTIN/GAEGURIN/RUGOSIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SLLLLFF
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                                                                                                                                                     s69903;
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                                                                                                                                                                                                     requires a license agreement (See http://www.isb-sib.ch/announce/
an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Chem. 269:10849-10855(1994).
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R237592; PubMed=9578480;
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  20
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BY SIMILARITY.
F -> K (IN REF. 2
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Pred. No. 17;
0; Mismatches
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ACIDIC PEPTIDE
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Ranidae; Rana
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ID ATPL_B
C P00845
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                                                                               RESULT 29
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01-FEB-1995 (Rel. 3
15-JUN-2002 (Rel. 4
ATP synthase C chai
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DISULFID
SEQUENCE
                        P00845;
                                           ATPL_BACP3
                                                                                                                                                                                                                                                                              TIGREAMS; TIGR01260; ATP_synt_c; 1.

PROSITE; PS00605; ATPASE_C; FALSE.NEG.

Hydrogen ion transport; CF(0); Transmembrane; Lipid-binding.

Hydrogen ion transport; CF(0); Transmembrane; Lipid-binding.

BINDING 56 DICYCLOHEXYLCARBODIINIDE (BY SIMILARITY).

SEQUENCE 72 AA; 7249 MW; 211ED1F2A5388B31 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR002379; ATPase_Csub.
InterPro; IPR000454; Eub_ATPase_Csub.
Pfam; PF00137; ATP-synt_C; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -i- SÜBÜNIT: F-TYPE ATPASES HAVE 2 COMPONENTS, CF(1) - THE CATALLIA
CORE - AND CF(0) - THE MEMBRANE PROTON CHANNEL. CF(1) HAS FIVE
SUBUNITS: ALPHA(3), BETA(3), GAMMA(1), DELTA(1), EPSILON(1). CF
HAS THREE MAIN SUBUNITS: A, B AND C.
I-MISCELLANGUS: DICYCLOHEXYLCARBODIIMIDE (DCDD) INHIBITS ATPASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (AUG-1994) to the EMBL/GenBank/DDBJ databases.

-i- FUNCTION: THIS IS ONE OF THE THERE CHAINS OF THE NOMENZYMATIC COMPONENT (CF(0) SUBURIT) OF THE ATPASE COMPLEX.

-i- CATALYTIC ACTIVITY: ATP + H(2)0 + H(+)(In) = ADP + phosphate
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Bacteria; Firmicutes
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P41015;
                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; D38057; BAA07244.1; HSSP; P00844; 1A91.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      entities requires a license agreement
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                                                                                                                                                                                                                                                                                                                                                                          PRINTS; PR00124; ATPASEC
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and this statement is not removed. Usage by an
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(EC 3.6.3.14) (Lipid-binding protein).
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                                           72
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ATPL_BACST
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Best Local
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PIR; S02255; S02255.

HSSP, P00844; IA91.

InterPro; IPR002379; ATPase_Csub.

InterPro; IPR000454; Eub_ATPase_Csub.

Pfam; PF00137; ATP-Synt_C; 1.

PRINTS; PR00124; ATPASEC.
ATPL_BACST
P42011;
01-NOV-1995
01-NOV-1995
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BINDING
SEQUENCE
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21-JUL-1986 (
15-JUN-2002 (
ATP synthase
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MEDILINE=88163679; PubMed=2894854;
Ohta S., Yohda M., Ishizuka M., Hirata H.,
Otawara-Hamamoto Y., Matsuda K., Kagawa Y.;
"Sequence and over-expression of subunits of synthase in thermophilic bacterium PS3.";
synthase in thermophilic bacterium PS3.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the European Bioinformatics Institute. There are no rest
use by non-profit institutions as long as its content
modified and this statement is not removed. Usage by ar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a between the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Amino acid sequence of the proteolipid subunit of translocating Arpase complex from the thermophilic Eur. J. Biochem. 107:57-65(1980).
-!- FUNCTION: THIS IS ONE OF THE THREE CHAINS OF THE COMPONENT (CF(0) SUBUNIT) OF THE ATPASE COMPLEX--!- CATALXTIC ACTIVITY: ATP + H(2)0 + H(+)(In) = AD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                             TIGRFAMs;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; X07804; CAA30649.1;
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Bacteria; Firmicutes; Bacillales; Bacillace
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                                                                                                                                                                             177 FSFIYLG
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SUBUNIT: F
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                                                                                                                                                                                                                                Similarity 7; Conserv
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ion transport; CF(0); Transmembrane; Lipid-binding;
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56
? AA;
(Rel. 32, Created)
(Rel. 32, Last sequence
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                                                         STANDARD;
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56
7334 MW;
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100.0%; Pr
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(EC 3.6.3.14) (Lipid-b
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.6.3.14) (Lipid-binding protein).
                                                                                                                                                                                                                                                    Score 7;
Pred. No.
                                                                                                                                                                                                                                                                                                            DICYCLOHEXYLCARBODIIMIDE 211ED1F2BD740FE1 CRC64;
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o. 18;
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bacterium F
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BINDING
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Submitted (AUG-1994) to the EMBL/GenBank/DDBJ databases.
-i- FUNCTION: THIS IS ONE OF THE THREE CHAINS OF THE NONENZYMATIC COMPONENT (CF(0) SUBUNIT) OF THE ATPASE COMPLEX.
-i- CATALYTIC ACTIVITY: ATP + H(2)0 + H(+)(In) = ADP + phosphate
                                                                                                                                                                                                                   P34485;
01-FEB-1994 (Rel. 28, Created)
15-JUN-2002 (Rel. 41, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Hypothetical protein F59B2.10 in chromosome I:
F59B2.10.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This
Wilson R., Ainscough R., Anderson K., Baynes C., Berks M., Cobsey T., Cooper J., Coulson Bonfield J., Burton J., Connell M., Copsey T., Cooper J., Coulson Craxton M., Dear S., Du Z., Durbin R., Favello A., Fraser A., Fulton L., Gardner A., Green P., Hawkins T., Hiller L., Jier M., Johnston L., Jones M., Kershaw J., Kirsten J., Laisster N., Latreille P., Lightning J., Lloyd C., Mortimore B., O'Callaghan M.
                                                                                       STRAIN=Bristol N2;
MEDLINE=94150718; PubMed=7906398;
                                                                                                                                                                                                                                                                                                                            CAEEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TIGRFAMS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR002379; ATPASe_Csub.
InterPro; IPR00454; Eub_ATPASe_Csub
Pfam; PF00137; ATP-synt_C; 1.
PRINTS; PR00124; ATPASEC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                     Eukaryota; Metazoa;
                                                                                                                                                                                                  Caenorhabditis elegans
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HSSP; P00844; 1A91
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                                                                                                                                                       NCBI_TaxID-6239;
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                                                                                                                                                                                                                                                                                                            MJO_CAEEL
                                                                                                                                                                                                                                                                                                                                                                                                        177 FSFIYLG 183
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MISCELLANEOUS: DICYCLOHEXYLCARBODIIMIDE (DCDD) INHIBITS ATPASE. SIMILARITY: BELONGS TO THE ATPASE C CHAIN FAMILY.
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ben the Swiss Institute of Bioinformatics and the EMBL outst
Buropean Bioinformatics Institute. There are no restrictions
by non-profit institutions as long as its content is in
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7; Conserv
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56 56 DICYCLOHEXYLCARBODIIMIDE (BY SIMILARITY).
72 AA; 7348 MW; 211ED564661D2FE1 CRC64;
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; Firmicutes; Bacill
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        56 AA;
                                                                                                                                                                                                                                                                                                                                                                                       71
                                                                                                                                                                       Peloderinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BAA07251.1;
                                                                                                                                                                                                                                                                                                            STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    41,
                                                                                                                                                                                     Nematoda; Chromadorea;
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                                                                                                                                                                     Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 7;
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                                                                                                                                                                                     Rhabditida; Rhabditoidea;
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RESULT 32
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Best Local S
Matches 7
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Submitted
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P05749;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Parsons J., Percy C., Rifken L., Roopra A., Saunders D., Shownl Sims M., Smaldon N., Smith A., Smith M., Sonnhammer E., Staden Sulston J., Thierry-Mieg J., Thomas K., Vaudin M., Vaughan K., Waterston R., Watson A., Weinstock L., Wilkinson-Sproat J., Wohldman P.;
                                                 use by non-profit institutions as long modified and this statement is not removed entitles requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                    Otaka E., Higo K.-I., Osawa S.; "Isolation of seventeen proteins and amino-terminal amino sequences of eight proteins from cytoplasmic ribosomes of Biochemistry 21:4545-4550(1982).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-OCT-1996 (Rel. 34, Last sequence update)
15-DEC-1998 (Rel. 37, Last annotation update)
608 ribosomal protein L22-A (YL31) (RP4).
RPL22A OR YLR061W OR L2168.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-NOV-1988 (Rel. 09, Created)
01-OCT-1996 (Rel. 34, Last ann
15-DEC-1998 (Rel. 37, Last ann
60S ribosomal protein L22-A (Y)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; Z11505; CAA77587.2;
PIR; S31130; S31130.
WormPep; F59B2.10; CE2883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboratic between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on it use by non-profit institutions as long as its content is in no was
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Durbin R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
Andre B., Urrestarazu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes; Saccharomycetales; Saccharomycetaceae; Saccharomyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Saccharomyces cerevisiae (Baker's yeast).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      modified and this statement is not removed
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REVISIONS.
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                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=83048950; PubMed=6814480;
Otaka E., Higo K.-I., Osawa S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE OF 1-51.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=4932;
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                                                                                                                                                                                                                                            MISCELLANEOUS: THERE ÂRE TWO GENES FOR L22 IN YEAST.
SIMILARITY: BELONGS TO THE L22E FAMILY OF RIBOSOMAL PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ISSLLLL
     x94607;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 7; DB 1; Pred. No. 26; 0; Mismatches
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FF0CCF5EEC2777A6 CRC64;
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                                                                             (See http://www.isb-sib.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 1;
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L outstation -
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THE REPORT OF THE PROPERTY OF 
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ID LSPA_C
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  TRANSMEM
TRANSMEM
                                                                                        Pfam; PF01252; Peptidase_A8; 1.
PRINTS; PR00781; LIPOSIGPTASE.
ProDom; PD004304; SigPTase_A8; 1.
TIGRFAMS; TIGR00077; lspA; 1.
PROSITE; PS00855; SPASE_II; 1.
                                                                                                                                                                                                                                                                                                                                     use by non-profit institutions as long modified and this statement is not removed entities requires a license agreement (See
                                                                                                                                                                                                                                                                                                                                                                                               between the Swiss Institute the European Bioinformatics Institute.
                                                  TRANSMEM
                                                                           Hydrolase;
                                                                                                                                                                                                                 InterPro; IPR001872;
                                                                                                                                                                                                                                               MEROPS; A08.001;
                                                                                                                                                                                                                                                                      EMBL; AE001314; AAC68005.1;
                                                                                                                                                                                                                                                                                                                   or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Chlamydia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=99000809; PubMed=9784136;
MEDLINE=99000809; PubMed=9784136;
MEDLINE=99000809; PubMed=9784136;
Medline=9784136;
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Medline=9784136;
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Medline=9784136;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Chlamydia trachomatis. Bacteria; Chlamydiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Lipoprotein signal peptidase (EC 3.4.23.36) (
peptidase) (Signal peptidase II) (SPase II).
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ProDom; PD007306; Ribosomal_L22e; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Science
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Davis R.W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ribosomal protein; Multigene family.
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SGD; S0004051; RPL22A.
InterPro; IPR002671; Ribosomal_L22e.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=813;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FUNCTION: THIS PROTEIN SPECIFICALLY CATALYZES THE REMOVAL OF SIGNAL PEPTIDES FROM PROLIPOPROTEINS (BY SIMILARITY). CATALYTIC ACTIVITY: Cleavage of N-terminal leader sequences from membrane prolipoproteins. Hydrolyzes Xaa-Xbb-Xcc-|-Cys, in which Xaa-is hydrophobic (preferably Leu), Xbb is often Ser or Ala, Xcc is often Gly or Ala, and the Cys is alkylated on sulfur with a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUBCELLULAR LOCATION: Integral membrane SIMILARITY: BELONGS TO PEPTIDASE FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                diacylglyceryl group.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 la trachomatis.";
282:754-759(1998)
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68
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13562 MW;
                                                                                                                                                                                                                                                                                                                                                                                          institutions as long as its content
                                                                                                                                                                                                                   SigPTase_A8
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84050FE484A56D69 CRC64;
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Q., Koonin E.V.,
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RESULT 35 Y129\_METJA ID Y129\_M

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Eki T., Naitou M., Hagiwara H., Abe M., Ozawa M.,
Sasanuma M., Tsuchiya Y., Shibata T., Wtanabe K.,
Yamazaki M.-A., Tsahiro H., Hanaoka F., Murakami Y
"Fifteen open reading frames in a 30.8 kb region c
chromosome VI from Saccharomyces cerevisiae.";
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P43604;
01-NOV-1995
01-NOV-1995
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                                                                                                                                        use by non-profit institutions as long as modified and this statement is not removed. Usentitles requires a license agreement (See htt or send an email to license@isb-sib.ch).
                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboratic between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on if
                                                                                                                                                                                                                                                                                                                                                    Murakami Y., Naitou M., Hagiwara H., Shibata T., Oz
Sasanuma S.-I., Sasanuma M., Tsuchiya Y., Soeda E.,
Yamazaki M., Tashiro H., Eki T.;
"Analysis of the nucleotide sequence of chromosome
Saccharomyces cerevisiae.";
                                                                                      Hypothetical protein. SEQUENCE 169 AA; 1
                                                                                                         EMBL; D50617; BAA09265.1; SGD; S0001922; YFR026C.
                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE From MEDLINE=95400292; PubMed=7670463; MEDLINE=95400292; PubMed=7670463; Medline=' v Naitou M., Hagiwara H.,
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                                                                                                                                                                                                                                                                                                                                            Nat. Genet.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Saccharomyces cerevisiae (Baker's yeast).
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                    196 ITVALLI
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118.8
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Saccharomycetaceae; Saccharomyces
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100.0%; Pr
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Last annotation update)
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                                          0;
                                                              Length 169
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(1)
SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
MEDLINE-92288310; PubMed-1600152;
Wan Rooijen G.J., Terning L.I., Moloney
"Nucleotide sequence of an Arabidopsis t
"Nucleotide sequence of an Arabidopsis t
"Nucleotide sequence of an Arabidopsis t
                                                                                                                01-APR-1993 (Rel. 25, Created)
01-APR-1993 (Rel. 25, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
01eosin 18.5 kDa.
01eosin 18.5 kDa.
AT4G25140 OR F13M23.280.
Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosid;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE-96337999; PubMed-8688087;

Bult C.J., White O., Olsen G.J., Zhou L., Fleischmann R.D.,
Sutton G.G., Blake J.A., FitzGerald L.M., Clayton R.A., Gocayne J.D.,
Kerlavage A.R., Dougherty B.A., Tomb J.-F., Adams M.D., Relch C.I.,
Overbeek R., Kirkness E.F., Weinstock K.G., Merrick J.M., Glodek A.,
Scott J.L., Geoghagen N.S.M., Weidman J.F., Fuhrmann J.L., Nguyen D.,
Utterback T.R., Kelley J.M., Peterson J.D., Sadow P.W., Hanna M.C.,
Cotton M.D., Roberts K.M., Hurst M.A., Kalne B.P., Borodovsky M.,
Klenk H.-P., Fraser C.M., Smith H.O., Woese C.R., Venter J.C.;
"Complete genome sequence of the methanogenic archaeon, Methanococcus
"Innaschil."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                057593;
01-NOV-1997
01-NOV-1997
16-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Science 273:1058-1073(1996).
-!- SUBCELLULAR LOCATION: Integral membrane protein (Potential).
-!- SIMILARITY: STRONG, TO M.JANNASCHII MJ0554 AND MJ0587.
                                                                                                                                                                                                                                                                                       ARATH
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                                                                                                                                                                                                                                                        OLE1_ARATH P29525;
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TIGR; MJ0129;
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Archaea; Euryarchaeota; N
Methanocaldococcaceae; Me
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protein;
31 51
58 7;
133 15
170 AA;
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PubMed=8688087;
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35, Last sequence update)
40, Last annotation update)
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78
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1 POTENTIAL.
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Kreis M., Delseny M., Pulgdomenech P., Watson M., Schmidthall T.,
Re Reichert B., Portetelle D., Perez-Alonso M., Boutry M., Bancroft I.,
RA Keichert B., Portetelle D., Perez-Alonso M., Boutry M., Bancroft I.,
RA Keichert B., Portetelle D., Perez-Alonso M., Boutry M., Bancroft I.,
RA Keichert B., Portetelle D., Perez-Alonso M., Boutry M., Bancroft I.,
RA Holzer E., Benaft S., Reidpausch M., Robben J., Vandenbussche F.,
RA Langham S.-A., McCullagh B., Bilham L., Robben J.,
RA Holzer E., Brandt A., Peters S., van Staveren M., Dirkee W.,
RA Holzer E., Brandt A., Peters S., van Staveren M., Libert H., Braun M.,
RA Holzer E., Brandt A., Peters S., van Staveren M., Lothkee R., De Clercq R.,
RA Mooijman P., Klein Lankhorst R., Rose M., Hauf J., Koetter P.,
RA Berneiser S., Hempel S., Feldpausch M., Lamberth S., Van den Daele H.,
RA Mooijman P., Klein Lankhorst R., Rose M., Hauf J., Koetter P.,
RA Mooijman P., Klein Lankhorst R., Rose M., Hauf J., Koetter P.,
RA Mooijman P., Klein Lankhorst R., Rose M., Hauf J., Koetter P.,
RA Mortagu M., Rogers J., Cronin A., Quali M., Bray-Allen S.,
RA Clark L., Doggett J., Hall S., Kay M., Lennard N., McLay K., Mayes R.,
RA Clark L., Doggett J., Hall S., Kay M., Lennard N., McLay K., Mayes R.,
RA Borkova D., Bilcecker H., Scharfe M., Grimm M., Loehnert T.-H.,
RA Borkova D., Oligley F., Clabauld G., Muendlein A., Felber R.,
RA Borkova D., Haase D., Liguori R., Piravandi E.,
RA Aubnourg S.,
RA Glabel C., Fuchs M., Fartmann B., Granderath K., Dauner D., Herzl A.,
RA Achendal S., Haller R., Schmidt W., Lecharny A., Aubnourg S.,
RA Chefdor F., Cooke R., Berger C., Monfort A., Casacuberta E.,
RA Glabel C., Fuchs R., Vilae D., Liguori R., Piravandi E.,
RA Schhon M., Murray J., Sheet P., Cordes M., Abbott A., Scott K., Johnson D.,
RA Glabel C., Dedhia N., Gnoj L., Schutz K., Huang E., Spiegel L.,
RA Schon M., Murray J., Sheet P., Cordes M., Abbott A., Scott K., Johnson D.,
RA Latrellle P., Lept L., Lamar B., Vordan C.,
RA Park M., Barghoff A., Jones K., Drone K., Cotton M., Joshu C.,
Antonc
                                                                                                                                                                This
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mayer K.F.X., Schueller C., Wambutt R. Pohl T., Duesterhoeft A., Stiekema W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=20083488; PubMed=10617198; Mayer K.F.X., Schueller C., Wambut
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SEQUENCE FROM
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                                                                           s SWISS-PROT entry is copyright. It is produced through a collaboratic ween the Swiss Institute of Bioinformatics and the EMBL outstation European Bioinformatics Institute. There are no restrictions on it by non-profit institutions as long as its content is in no we
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R., Mueller M.,
                                                                                                                                        collaboration
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(See http://www.isb-sib.ch/announce,

and for

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RESULT 37
OLE2_BRANA
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1- FUNCTION: MAY HAVE A STRUCTURAL ROLE TO STABILIZE THE LIPID BODY DURING DESICCATION OF THE SEED BY PREVENTING COALESCENCE OF THE OIL. PROBABLY INTERACTS WITH BOTH LIPID AND PHOSPHOLIPID MOLETIES OF LIPID BODIES. MAY ALSO PROVIDE RECOGNITION SIGNALS FOR SPECIFIC LIPASE ANCHORAGE IN LIPOLYSIS DURING SEEDLING GROWTH.

1- SUBCELLULAR LOCATION: SURFACE OF OIL BODIES. OLEOSINS EXIST AT A MONOLAYER LIPID/WATER INTERFACE.

1- DEVELOPMENTAL STAGE: ACCUMULATES DURING THE DESICCATION PHASE OF
                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its
                                                         DOMAIN
REPEAT
                                                                                                                        Pfam; PF01277; Oleosin; PROSITE; PS00811; OLEOS
                                                                                                                                                                                            or send
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PIR;
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                                            REPEAT
                                                                                               NON_TER
                                                                                                               Seed; Oil
                                                                                                                                                                    EMBL; X58000; CAA41064.1;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Brassica napus (Rape).
Eukaryota; Viridiplantae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ol-DEC-1992 (Rel. 24, Created)
Ol-DEC-1992 (Rel. 24, Last seque)
16-CCT-2001 (Rel. 40, Last annot.
Major oleosin NAP-II (Fragment).
                                                                                     DOMAIN
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$22538; $22538
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                                                                                                                                                      IPR000136; Oleosin.
                                                                                                             body;
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RESULT 38
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Best Local
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P29109;
01-DEC-1992 (Rel. 24, Created)
01-DEC-1992 (Rel. 24, Last sequence up
16-OCT-2001 (Rel. 40, Last annotation
Oleosin Bn-V (BnV) (Fragment).
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                                                      SEQUENCE
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                                                                                                                                                                                                                                            use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                       Keddie J., Edwards E.-W., Gibbons T., Shaw C., Murphy D.J.;
"Sequence of an oleosin cDNA from Brassica napus.";
Plant Mol. Biol 19:1079-1083(1992).
-i- FUNCTION: MAY HAVE A STRUCTURAL ROLE TO STABILIZE THE LIPID BODY
DURING DESICCATION OF THE SEED BY PREVENTING COALESCENCE OF THE
OIL. PROBABLY INTERACTS WITH BOTH LIPID AND PHOSHOLIPID MOIETIES
OF LIPID BODIES. MAY ALSO PROVIDE RECOGNITION SIGNALS FOR SPECIFIC
LIPASE ANCHORAGE IN LIPOLYSIS DURING SEEDLING GROWTH.
-i- SUBCELLULAR LOCATION: SURFACE OF OIL BODIES. OLEOSINS EXIST AT A
MONOLAYER LIPID/WATER INTERFACE.
-i- BURNEYO DEVELOMBEN ANGEL ACCUMULATES DURING THE DESICCATION PHASE OF
-I- DEVELOPMENTAL STAGE: ACCUMULATES DURING THE DESICCATION PHASE OF
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MEDLINE=92379264; PubMed=1511134;
                                                                                          DOMAIN
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                                                                                                                                                                                                                                                                                                                     EMBRYO DEVELOPMENT. SIMILARITY: BELONGS TO THE OLEOSIN FAMILY.
                                                                                                                                                                                x63779; CAA45313.1; -. S25089; S25089.
   Similarity 7; Conserv
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                                                                                                                              body;
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               Score 7;
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                DB 1;
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RESULT 40
UBC_ASFM2
ID UBC_ASFM2
AC P2586
DT 01-M2
DT 15-JI
DE Ubiq
DE Ubiq
GN ASFV
OC Viri
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p30817;
p101-JUL-1993 (Rel. 26, Created)
01-JUL-1993 (Rel. 26, Last sequence update)
01-JUL-1993 (Rel. 40, Last annotation update)
16-CCT-2001 (Rel. 40, Last annotation update)
Virion protein US10 homolog (Fragment).
Simian herpes B virus (Cercopithecid herpesvirus 1) (Shbv).
Viruses; dSDNA viruses, no RNA stage; Herpesviridae;
Alphaherpesvirinae; Simplexvirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.

MEDLINE-92113572; PubMed-1309859;

Killeen A.M., Harrington L., Wall L.V.M., Kelly D.C.;

Killeen A.M., Harrington L., Wall L.V.M., Kelly D.C.;

"Nucleotide sequence analysis of a homologue of herpes simplex virus

"Nucleotide sequence analysis of a homologue of herpes b virus.";

Type 1 gene US9 found in the genome of simian herpes B virus.";

J. Gen. Virol. 73:195-199(1992).

J. Gen. Virol. 73:195-199(1992).

-I- SIMILARITY: BELONGS TO A FAMILY THAT GROUP TOGETHER HSV-1 US10,

EHV-1 66, EHV-4 ORF3, AND VZV 64/69.
                                                                                                                                                                                                                                                                                                           01-MAY-1992 (Rel. 22, Created)
01-MAY-1992 (Rel. 22, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Ubiquitin-conjugating enzyme E2-21 kDa (EC 6.3.2.19)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                              SEQUENCE FROM N.A.
MEDLINE-92155177; PubMed-1310934;
Hingamp P.M., Arnold J.E., Mayer R.J.,
                                                                                                                                                                                                                                          African swine fever virus (isolate Malawi Lil 20/1)
Viruses; dsDNA viruses, no RNA stage; Asfarviridae;
                                                                                                                virus.
                                                                                                                             "A ubiquitin conjugating
                                                                                                                                                                                                                      NCBI_TaxID=10500;
                                                                                                                                                                                                                                                                             ASFV-UBC
                                                                                                                                                                                                                                                                                          (Ubiquitin-protein ligase) (Ubiquitin carrier protein).
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OTHER PROTEINS.

CATALYTIC ACTIVITY: ATP + ubiquitin + pr diphosphate + protein N-ubiquityllysine. PATHWAY: Ubiquitin conjugation; second :
                                                                         J. 11:361-366(1992)
FUNCTION: CATALYZES
                                                                                                                                                                                                                                                                                                                                                                                                    ASFM2
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208 AA;
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ilarity 100.0%;
Conservative (
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                                                                                                                                                                                                                                     viruses, no RNA stage;
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B8076C63AC0A25E6 CRC64;
                                      ubiquitin + protein
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d by African
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Best Local
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01-OCT-1996
16-OCT-2001
                                                                                                                                                            This SWI
between
                                                                                                                                                                                                    Synechocystis sp. strain PCC6803. I. Sequence feature: region from ap positions 64% to 92% of the genome."; DNA Res. 2:153-166(1995).
-i- FUNCTION: INVOLVED IN DNA REPAIR (BY SIMILARITY).
-i- SIMILARITY: BELONGS TO THE RADC FAMILY.
                                                                                                                                                                                                                                                              Kaneko T., Tanaka A., Sato S., Kotani H., Sazuka T., Miyajima N., Sugiura M., Tabata S.; Sugiura M., Tabata S.; "Sequence analysis of the genome of the unicellular cyanobactarium Synechocystis Sp. strain PCC6803. I. Sequence features in the 1 Mb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RADC_SYNY3
P52601;
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SEQUENCE
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ProDom; PD000461; UBQ_conJugat; 1.

SMART; SMO0212; UBCc; 1.

PROSITE; PS00183; UBIQUITIN_CONJUGAT_1;

PROSITE; PS0127; UBIQUITIN_CONJUGAT_2;

UBL Conjugation pathway; Ligase,

BINDING 85 85
                                                                                               modified and this statement entities requires a license
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EMBL; X71982; CAA50851.1; -.
PIR; S19158; S19158.
HSSP; Q02159; 2UCZ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                        InterPro; IPR003583; HHH_1.
InterPro; IPR001405; RadC.
                                                        EMBL; D64000; BAA10123.1;
                                                                                                                               use
                                                                                                                                                                                                                                                                                                                       MEDLINE=96127529;
                                                                                                                                                                                                                                                                                                                                                               Bacteria; Cyanobacteria;
NCBI_TaxID=1148;
                                                                                                                                                                                                                                                                                                                                                                                             Synechocystis sp.
                                                                                                                                                                                                                                                                                                                                                                                                                DNA repair protein RADC OR SLL0766.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                                      or send an email to license@isb-sib.ch).
                                                                                                                                             the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
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                                                                                                                                                         SWISS-PROT entry is copyright. It is produced through a ceen the Swiss Institute of Bioinformatics and the EMBL
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                                                                                                                non-profit institutions as long and this statement is not removed.
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213 AA;
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(Rel. 34, Last sequence update)
(Rel. 40, Last annotation update)
protein radC homolog.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1.5%; So lilarity 100.0%; I conservative 0;
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RadC;
hH1; 1
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                                                                                                                                                                                                                                                                                                        PubMed=8590279;
A., Sato S., Kotani H.,
                                                                                                                                                                                                                                                                                                                                                                                               (strain
                                                                                                    license agreement
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s; Pred. No. 47;
0; Mismatches
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ASP/GLU-RICH (ACIDIC).
; F9671BC7385D6DCE CRC64;
                                                                                                                                                                                                                                                                                                                                                                                               6803).
                                                                                                                                                                                                                                                 Sequence features of the genome.";
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MEDLINB-99287316; PubMed=10360571;

Nelson K.E., Clayton R.A., Gill S.R., Gwinn M.L., Dodson R.J.,

Haft D.H., Hickey E.K., Peterson J.D., Nelson W.C., Ketchum K.A.,

McDonald L., Utterback T.R., Malek J.A., Linher K.D., Garrett M.M.,

Stewart A.M., Cotton M.D., Pratt M.S., Phillips C.A., Richardson D.,

Heidelberg J., Sutton G.G., Fleischmann R.D., Eisen J.A., White O.,

Salzberg S.L., Smith H.O., Venter J.C., Fraser C.M.;

Salzberg S.L., Smith H.O., Venter J.C., Fraser C.M.;

"Evidence for lateral gene transfer between Archaea and Bacteria from genome sequence of Thermotoga maritima.";

Nature 399:323-339(1999).

Nature 399:323-339(1999).

Nature 399:323-339(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
4-diphosphocytidyl-2-C-methyl-D-erythritol kinase (EC 2.7.1.148) (CMK)
(4-(cytidine-5'-diphospho)-2-C-methyl-D-erythritol kinase).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TIGRFAMS; TIGR00608; radc; PROSITE; PS01302; RADC; 1.
DNA repair; Complete protec
                                                                       Complete proteome. NP BIND 97
                                                                                                                                                                                                                                                the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for con
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SEQUENCE
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STRAIN=MSB8 / DSM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Thermotogaceae; Thermotoga.
NCBI_TaxID=2336;
                                                                                                   Transferase; Kinase; Isoprene biosynthesis; ATP-binding;
                                                                                                                Pfam; PF00288; GHMP_kinases; 1.
TIGRFAMs; TIGR00154; ispE; 1.
                                                                                                                                               InterPro; IPR001745; GHMPk
InterPro; IPR004424; IspE.
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                                                                                                                                                                                                                                                                                                                                                                                                             SIMILARITY).
CATALYTIC ACTIVITY: ATP +
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                                                      107 A'; 30056 MW;
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                              1.5%; Score 7;
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               DB 1
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ine 5'-diphospho)-2-C-methyl-
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RA Borriss R., Boursier L., Brans A., Braum M., Brignell S.C., Brons S.,
RA Borriss R., Boursier L., Brans A., Braum M., Brignell S.C., Bron S.,
RA Brouillet S., Bruschi C.V., Caldwell B., Capuano V., Carter N.M.,
RA Brouillet S., Errington J., Fohrerton I.F., Cummings N.J., Daniel R.A.,
RA Choi S.K., Codani J.J., Connerton I.F., Cummings N.J., Daniel R.A.,
RA Choi S.K., Codani J.J., Fabret C., Ferrari E., Foulger D.,
RA Choi S.K., Codani J.J., Fabret C., Ferrari E., Foulger D.,
RA Choi S.K., Codani J.J., Fabret C., Ferrari E., Foulger D.,
RA Choi S.K., Codani J.J., Fabret C., Ferrari E., Foulger D.,
RA Choi S.K., Codani J.J., Fabret C., Ferrari E., Foulger D.,
RA Choi S.K., Codani J.J., Fabret C., Ferrari E., Foulger D.,
RA Choi S.K., Codani J.J., Fabret C., Ferrari E., Foulger D.,
RA Fritz C., Fujita M., Fujita Y., Fuma S., Galizzi A., Galleron N.,
RA Guiseppi G., Guy B.J., Haga K., Haiech J., Harwood C.R., Henaut A.,
RA Guiseppi G., Guy B.J., Haga K., Haiech J., Harwood C.R., Henaut A.,
RA Hilbert H., Holsappel S., Hosono S., Hullo M.F., Itaya M., Jones L.,
RA Kurita K., Lapidus A., Lardinois S., Lauber J., Lazarevic V.,
RA Kurita K., Lapidus A., Lardinois S., Lauber J., Lazarevic V.,
RA Medina N., Mellado R.P., Mizuno M., Moestil D., Nakai S., Noback M.,
RA Moone D., O'Reilly M., Ogawa K., Ogiwara A., Oudega B., Park S.H.,
RA Parro V., Pohl T.M., Portetelle D., Porwollik S., Prescott A.M.,
RA Parro V., Pohl T.M., Portetelle B., Rapoport G., Rey M., Reynolds S.,
RA Rieger M., Rivolta C., Rocha E., Roche B., Rose M., Sadaie Y.,
RA Sekiguchi A., Tacconi E., Takasaji T., Takahashi H., Takemaru K.,
RA Tosato V., Uchlyama S., Wandenbol M., Vannier F., Vassarott H. A.,
RA Tosato V., Uchlyama S., Wandenbol M., Vannier F., Vassarott H. A.,
RA Viari A., Wandenbol M., Vannier F., Vassarott H. A.,
RA Viari A., Wandenbol M., Vannier F., Vassarott H. A.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=98015415; PubMed=9353931; Medina N., Vannier F., Roche B., Autret S., Levine A., "Sequencing of regions downstream of addA (98 degrees) degrees) in Bacillus subtilis.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Shiga Y., Yamagata H., Udaka S.;
"Characterization of the gene encoding inhibitor of Bacillus subtilis and its major intracellular proteinase.";
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01-FEB-1995 (Rel. 31, Created)
15-JUN-2002 (Rel. 41, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDIINE=98044033; PubMed=9384377; Moszer I., Albertini A.M., Alloni G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "A 10.3 kbp segment from nprB to argJ at Bacillus subtilis chromosome.";
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN=168 / DB104;
MEDLINE=94042884; PubMed=8226659;
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Yamamoto H.,
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Saccharomyces cerevisiae (Baker's yeast)
EUKaryota; Fun9i; Ascomycota; Saccharomycetales; Saccharomycetanes; Saccharomycetanes; Saccharomycetanes
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                                                                                                                                                     MEDLINE-89141759; PubMed=3066908; Passmore S., Maine G.T., Elble R., "Saccharomyces cerevisiae protein i necessary for mating of MAT alpha
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SubtiList; BG10850; yitT.
InterPro; IPR003740; DUF161.
Pfam; PF02588; DUF161; 1.
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EMBL;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A. MEDLINE-90249735;
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    MEDLINE-88030692;
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    -i- SUBCELLULAR LOCATION: Integral membrane protein
    -i- SIMILARITY: TO B.SUBTILIS YPJC AND YQFU.

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"The complete genome sequence of the Gram-positive bacterium Bacillus
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L; Y09476; CAA70630.1;
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L; Z99109; CAB12952.1;
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    PubMed=3311883
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InterPro; IPR002100; TF_MADSbox.
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"Crystal structure of the yeas
Nature 391:660-66(1998).
-!- FUNCTION: INTERACTS WITH 7
ALPHA-1 ACTIVATOR THEREBY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROSITE; PS00350; MADS_BOX_1; 1.
PROSITE; PS50066; MADS_BOX_2; 1.
Transcription regulation; DNA-binding; Nuclear protein; DOMAIN
18 72 MADS.
DOMAIN 98 120 ASP/GLU-RICH (ACIDIC).
DOMAIN 98 120 ASP/GLU-RICH (ACIDIC).
CONFLICT 9 9 P -> S (IN REF. 3).
CONFLICT 37 37 S -> F (IN REF. 3).
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PRINTS; PR00404; MADSDOMAIN.
SMART; SM00432; MADS; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Odell C., Bowman S., Submitted (FEB-1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    chromosome mapping.";
Gene 55:265-275(1987).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EM
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Saccharomyces cerevisiae: nucleotide sequence chromosome mapping.":
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN-S288c
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                                                                                                                                                                                                                                                    99
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SUBCELLULAR LOCATION: Nuclear.
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P -> S (IN REF. 3).
S -> F (IN REF. 3).
GA -> AR (IN REF. 3).
MISSING (IN REF. 3).
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EMBL/GenBank/DDBJ
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Last sequence update)
Last annotation updat

update)

Created)

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RESULT 46
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Best Local :
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     SEQUENCE FROM N.A.
STRAIN=K12 / MG1655;
MEDLINE=97426617; Pu
                                                                                                                                                                           Escherichia coll.
                                                                                                                                                                                                                           Q47624;
Q1-NOV-1997 (Rel. 35, Created)
Q1-NOV-1997 (Rel. 35, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation updat
Peptide transport system permease protein s
SAPC OR B1292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAINEI TOR N16961 / Serotype 01;
MEDLINE-20406833; PubMed-19952301;
Heidelberg J.F., Eisen J.A., Nelson W.C., Clayton R.A., Gwinn M.L.,
Dodson R.J., Haft D.H., Hickey E.K., Peterson J.D., Umayam L.A.,
Gill S.R., Nelson K.E., Read T.D., Tettelin H., Richardson D.,
Ermolaeva M.D., Vamathevan J., Bass S., Qin H., Dragoi I., Sellers P.
McDonald L., Utterback T., Fleischmann R.D., Nierman W.C., White O.,
Salzberg S.L., Smith H.O., Colwell R.R., Mekalanos J.J., Venter J.C.,
Praser C.M.
                                                                                     SEQUENCE FROM N.A.
STRAIN=K12 / FRAG5;
Epstein W., Noelker
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HSSP;
TIGR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for contenting the modified are the statement in the content is not removed.
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-!- FUNCTION: Interacts directly with
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STRAIN=El Tor N16961
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-!- SIMILARITY: BELONGS TO THE ZIPA FAMILY.
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Bacteria; Proteobacteria;
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                                                                       (APR-1996)
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(By similarity).
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CYTOPLASMIC (POTENT)
A7DE34AC3DE64A35
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; Mismatches
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                                                                                         Tewes R.,
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Best Local
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            15-JUN-2002 (Rel. 41, Created)
15-JUN-2002 (Rel. 41, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Sodium/potassium/calcium exchanger 1 (Na(+)/K(+)/Ca(2+)-exchange protein 1) (Retinal rod Na-Ca+K exchanger) (Fragment).
SLC24A1 OR NCKX1.
                                                                                                                                                                  NKX1_BISBI
O46383;
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TRANSMEM
SEQUENCE
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Aiba H., Kashimoto K., Kimura S., Kitakawa M., Kitagawa M.,
Kasai H., Kashimoto K., Kimura S., Kitakawa M., Kitagawa M.,
Makino K., Miki T., Mizobuchi K., Mori H., Mori T., Motomura K.,
Nakade S., Nakamura Y., Nashimoto H., Nishio Y., Oshima T., Sai
Sampei G., Seki Y., Sivasundaram S., Tagami H., Takeda J.,
Takemoto K., Takeuchi Y., Wada C., Yamamoto Y., Horiuchi T.;
"A 570-kb DNA sequence of the Escherichia coli K-12 genome
corresponding to the 28.0-40.1 min region on the linkage map.";
DNA Res. 3:363-377(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Complete
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; X97282; CAA65939.1; -. EMBL; AE000227; AAC74374.1; -. EMBL; D90767; BAA14853.1; -. EMBL; D90768; BAA14862.1; -. EMBL; D90766; BAA14845.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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PROSITE; PS00402; BPD_TRANSP_INN_MEMBR; FALSE_NEG.
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InterPro; IPR000515; BI
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-i- SUBCELLUAR LOCATION: Integral membrane protein. Inner membr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN-K
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Transport;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mau B.,
                                                                                                                                                                                                                                                                                                                     271
                                                                                                                                                                                                                                                                                                                                                                     136 AAIMISV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (Potential).
SIMILARITY: BELONGS TO THE BINDING-PROTEIN-DEPENDENT TRANSPORT
SYSTEM PERMEASE FAMILY. OPPBC SUBFAMILY.
                                                                                                                                                                                                                                                                                                                     AAIMISV
                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Shao
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30
99
134
1197
223
259
296 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Peptide transport;
                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                     277
                                                                                                                                                                                                                                                                                                                                                                   142
                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          50
119
154
217
243
279
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                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
57CD1F8180BF0B7C C
                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 7;
Pred. No
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Transmembrane;
                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Escherichia coli K-12.";
                                                                                                                                                                                                                                                                                                                                                                                                                                          No.
                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                           DB
62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Goeden M.A., Rose D.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rode C.K., Mayhew G.F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Inner membrane;
                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 296;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Burland V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       M., Itoh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a collaboration - MBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                   0
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(American bison)

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В
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                                                                                                                                                                                                                                         _AEDAE
                                                                                                                                                                01-NOV-1990 (Rel. 16, 0
01-NOV-1990 (Rel. 16, 1
16-OCT-2001 (Rel. 40, 1
D7 protein precursor (AD7)
                                                                                                                                                                                                                   D7_AEDAE
P18153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mammalia;
Bovidae; E
         the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                     SEQUENCE FROM N.A.
STRAIN-Rockefeller;
MEDLINE-91270277; PI
                                                                                                                             Eukaryota; Metazoa; Arthropoda; Mandibulata; Insecta; Pterygota; Neoptera; Endopterygota;
                                                                                                                                          Aedes aegypti (Yellowfever mosquito).
Eukaryota: Metazoa: Arthropoda; Mandibulata;
                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=98138491; PubMed=9478004; Tucker J.E., Winkfein R.J., Cooper C.B., Schi "cDNA cloning of the human retinal rod Na-Ca with a revised bovine sequence.";
                                                                                                              NCBI_TaxID=7159
                                                                                                                          Culicoidea;
                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                             TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                         NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                  Potassium
                                                                                                                                                                                                                                                                                                                                                                                                                           Vision;
                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; AF025480; AAC13320.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                224
                                                                                                                                                                                                                                                  48
                                                                                                                                                                                                                                                                                                    66 DEEEDEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 controlling the calcium concentration of outer segments during light and darkness. Light causes a rapid lowering of cytosolic free calcium in the outer segment of both retinal rod and cone photoreceptors and the light-induced lowering of calcium is caused by extrusion via this protein which plays a key role in the process of light adaptation. Transports one Ca(2+) and one K(+) in exchange for four Na(+) (By similarity).

SUBCELLULAR LOCATION: Integral membrane protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUBCELLULAR LOCATION: Integral membrane protein. SIMILARITY: BELONGS TO THE SLC24A FAMILY OF TRANSPORTERS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FUNCTION: Critical component of the visual transduction
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a revised bovine sequence.
                                                                                                                                                                                                                                                                                DEEEDEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SWISS-PROT entry is copyright. It is produced through a collaboration en the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                       Similarity
7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                        an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                           Transport;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bovinae;
                                                                                                                                                                                                                                                                                                                                                                                                                transport;
                                                                                                                                                                          0 (Rel. 16, Last sequence update)
1 (Rel. 40, Last annotation updat
precursor (Allergen Aed a 2).
                                                                                                                                                                                                                                                                                                                                                             259
218
300
300 7
                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                   72
                                                                                                                                                                                                                                                                                230
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                                                                                                                                                                                                                            STANDARD;
                                                                      PubMed=2052024;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bison.
                                                                                                                                                                                                                                                                                                                                                            275 F
242 P
300
31671 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                           Antiport;
                                                                              TISSUE=Salivary gland;
                                                                                                                                                                                                                                                                                                                                                                                                                  Sodium
                                                                                                                                                                                                        Created)
                                                                                                                                                                                                                                                                                                                                            . 58
  ADULT
                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                transport;
                                                                                                                                                                                                                                                                                                                                 Score 7;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                         Symport;
                                                                                                                                                                                                                                                                                                                                                                                             POTENTIAL.
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 FEMALE SALIVARY GLAND
                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                               2BE592DA5AB9781E CRC64;
                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                            321
                                                                                                                                                                                                                                                                                                                                                                                                                 Calcium transpo
; Transmembrane.
                                                                                                                                                                                     update)
                                                                                                                                                                                                                                                                                                                                           DB
                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Schnetkamp
                                                                                                                                 Pancrustacea; Hexapoda;
Diptera; Nematocera;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 + K exchanger:
                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                          transport;
                                                                                                                                                                                                                                                                                                                                          Length 300;
                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P.P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 comparison
                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                     Gaps
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RESULT 49
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Best Local S
Matches
                                                                                                                                                                                                                                                                                                                   01-JUN-1994
15-JUN-2002
                                                                                                         Gene
[2]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VARIANT VARIANT
                                                                                                                                    Eukaryota; Fungi; Ascomy Schizosaccharomycetales;
                                                                                                                                                                                                                                                                                                                                                                       RAD1
                                  Sunnerhagen P., Seaton B.L., Nasim A., Subramani S. "Cloning and analysis of a gene involved in DNA report recombination, the radl gene of Schizosaccharomyces Mol. Cell. Biol. 10:3750-3760(1990).
                                                                                                                                                                                              STRAIN-972
                                                                                                                                                                                                                                                                                 Schizosaccharomyces pombe
                                                                                                                                                                                                                                                                                                                                                                                  SCHPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; M33156; AAA29347.1; EMBL; M33157; AAA29348.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            use by non-profit institutions as long modified and this statement is not removed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its the European Bioinformatics Institute. There are no restrictions on its content is in no way use by non-profit institutions as long as its content is in no way
                                                                                 SEQUENCE FROM N.A. MEDLINE=90287166; PubMed=2355921;
                                                                                                                                   CDNA
                                                                                                                                                                                 MEDLINE=95011649;
                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                              Schizosaccharomyces.
                                                                                                                                                                                                                                                                                             RAD1 OR SPAC1952.07
                                                                                                                                                                                                                                                                                                         DNA repair protein
                                                                                                                                                                                                                                                                                                                                               01-AUG-1991
                                                                                                                                                                                                                                                                                                                                                         P22193;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Allergen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      or send an
MEDLINE-94261448;
                                                                                                                                                                                                                                 NCBI_TaxID=4896;
           REVISIONS
                                                                                                                                                                                                                                                                                                                                                                                                                                                        422 LLLLAIF 428
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                                                                                                                      148:155-159(1994).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                      (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               321 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                 10
                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                 29,
                                                                                                                                                                                  PubMed=7926829;
                                                                                                                                                                                                                                                                   Ascomycota;
PubMed-8202381;
                                                                                                                                                                                                                                                                                                          rad1.
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321
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223
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                                                                                                                                                                                                                                                                                                                   Last sequence up
                                                                                                                                                                                                                                                                                                                                               Created)
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                                                                                                                                                                                                                                                       Schizosaccharomycetaceae;
                                                                                                                                                                                                                                                                 (Fission yeast).
ota; Schizosaccharomycetes;
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D7 PROTEIN
L -> P.
F -> V.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AA8D6328E46FBCC9 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               < ດ
                                                                                                                                                                                                                                                                                                                                                                     323
                                                                                                                                                                                                                                                                                                                    update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 1;
5. 67;
                                                        Subramani S.;
ed in DNA repair
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 321;
                                                                                                                                            s of three exons
Ustilago maydis
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M.Q., Marr T.G.;

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RESULT 50
Y∰?9_SYNY3
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                                                                                                                                                                                                                                                                                   RA Gentles S., Goble A., Hamlin N., Harris D., Hidalgo J., Hodgson G.,
RA Holroyd S., Hornsby T., Howarth S., Huckle E.J., Hunt S., Jagels K.,
RA Holroyd S., Hornsby T., Howarth S., Huckle E.J., Hunt S., Jagels K.,
RA Holroyd S., Hornsby T., Howarth S., McDonald S., McLean J.,
RA Holroyd S., Hornsby T., Howarth S., McDonald S., McLean J.,
RA Mooney P., Moule S., Mungall K., Murphy L., Niblett D., Odell C.,
RA Mooney P., Moule S., Mungall K., Murphy L., Niblett D., Odell C.,
RA Cliver K., O'Nell S., Pearson D., Quail M.A., Rabbinowitsch E.,
RA Rutherford K., Rutter S., Saunders D., Seeger K., Sharp S.,
RA Rutherford K., Rutter S., Saunders D., Seeger K., Sharp S.,
RA Woodward J., Volckaert G., Aert R., Robben J., Grymonprez B.,
RA Woodward J., Volckaert G., Aert R., Robben J., Grymonprez B.,
RA Woodward J., Volckaert G., Aert R., Robben J., Grymonprez B.,
RA Woodward J., Volckaert G., Aert R., Robben J., Grymonprez B.,
RA Woodward J., Volckaert G., Aert R., Robben J., Grymonprez B.,
RA Woodward J., Volckaert G., Aert R., Robben J., Grymonprez B.,
RA Woodward J., Volckaert G., Aert R., Robben J., Grymonprez B.,
RA Woodward J., Volckaert G., Holzer E., Moestl D., Hilbert H.,
RA Borzym K., Langer I., Beck A., Lehrach H., Reinhardt R., Pohl T.M.,
RA Gabel C., Fuchs M., Fritzc C., Holzer E., Moestl D., Hilbert H.,
RA Eger P., Zimmermann W., Wedler H., Wambutt R., Purnelle B.,
RA Giffeau A., Cadieu E., Dreano S., Gloux S., Lelaure V., Mottler S.,
RA Galibert F., Aves S.J., Xiang Z., Hunt C., Moore K., Hurst S.M.,
RA Galibert F., Aves S.J., Xiang Z., Hunt C., Moore K., Hurst S.M.,
RA Galibert F., Aves S.J., Xiang Z., Hunt C., Moore K., Hurst S.M.,
RA Lucas M., Rochet M., Gaillardin C., Tallada V.A., Garzon A., Thode G.,
RA Lucas M., Rochet M., Gaillardin C., Tallada V.A., Garzon A., Thode G.,
RA Carutti L., Lowe T., McCombie W.R., Paulsen I., Potashkin J.,
RA Carutti L., Lowe T., McCombie W.R., Paulsen I., Potashkin J.,
RA Carutti L., Lowe T., McCombie W.R., Paulsen J.,
Ra Damingaez A., Revelta J.L., McCombie W.R., Pot
                                                                                                Б
                                                                                                                                                                                            Matches
                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                 DNA damage; DNA repair; Hydrolase; Exonuclease; Nuclear protein.

DOMAIN 285 294 GLU-RICH (ACIDIC).

DOMAIN 285 323 ASP/GLU-RICH (ACIDIC).
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                                                                                                                                                                                                                                                                              SEQUENCE
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SIMILARITY: SOME, TO HUMAN AND HAMSTER GADD45.

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CAUTION: REF.2 SEQUENCE STARTED AT POSITION 130, DUE TO THE THAT TWO EXONS WERE MISSED.
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22:1750-1759(1994).
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"Sequence analysis of the genome of the unicellular cyanobacterium Synechocystis sp. strain PCC6803. II. Sequence determination of the entire genome and assignment of potential protein-coding regions."; DNA Res. 3:109-136(1996).
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Bacteria; Cyanobacteria; Chroococcales; Synechocystis NCBI_TaxID=1148;
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Sequence 4, Application US/09754949
Patent No. US20020015939A1
GENERAL INFORMATION:
APPLICANT: MCCARTHY, JUSTIN
APPLICANT: CORDELL, BARBARA
TITLE OF INVENTION: METHODS FOR IDENTIFYING INTITLE OF INVENTION: NEURONAL DEGENERATION
FILE REFERENCE: SCIOS.012A
CURRENT APPLICATION NUMBER: US/09/754,949
CURRENT FILING DATE: 2001-01-04
NUMBER OF SEQ ID NOS: 16
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 4
LENGTH: 467
TYPE: PRT
ORGANISM: Homo Sapien
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                                                                                          Query Match
Best Local Similarity 99.8
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Pred. No. 0;
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Sequence 179, App
Sequence 184, App
Sequence 184, App
Sequence 34864, A
Sequence 34924, A
Sequence 37682, A
Sequence 47013, A
Sequence 930, App
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Sequence 6, Appli
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Sequence 167, Appl
Sequence 39173, Appl
Sequence 39176, A
Sequence 374, Appl
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GENERAL INFORMATION:
APPLICANT: MONTELIC, et al.
TITLE OF INVENTION: Method of Controlling the
FILE REFERENCE: 4115-161
CURRENT APPLICATION NUMBER: US/09/878.454A
CURRENT FILING DATE: 2001-06-11
PRIOR APPLICATION NUMBER: 60/210,939
PRIOR APPLICATION NUMBER: 60/210,939
PRIOR FILING DATE: 2000-06-11
NUMBER OF SEO ID NOS: 26
SOFTWARE: PatentIn version 3.1
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; Patent No. US20020127541A1
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; FEATURE:
; NAME/KEY: misc_feature
; OTHER INFORMATION: Incyte ID No. US20020082211A1
US-09-895-035-14
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Matches
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SOFTWARE: PERL Program
SEQ ID NO 14
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APPLICANT: Patterson, Chandra
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TITLE OF INVENTION: HUMAN PRESENTLIN VARIANT
FILE REFERENCE: PC-0047 CIP
CURRENT APPLICATION NUMBER: US/09/895,035
CURRENT FILING DATE: 2001-06-29
CURRENT FILING DATE: 2001-06-29
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  APPLICANT:
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Kaser, Matthew R.
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; ORGANISM: H
US-10-071-900-1
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Best Local S
Matches 466
             SEQ ID NO 12
LENGTH: 463
                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                       Sequence 12,
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                                     CURRENT APPLICATION NUMBER: US/09/895,035
CURRENT FILING DATE: 2001-06-29
PRIOR APPLICATION NUMBER: 09/116,640
PRIOR FILING DATE: 1998-07-16
NUMBER OF SEQ ID NOS: 14
SOFTWARE: PERL Program
                                                                                                                     APPLICANT: Patterson, Chandra
APPLICANT: Murry, Lynn E.
APPLICANT: Kaser, Matthew R.
TITLE OF INVENTION: HUMAN PRESENTLIN VARIANT
FILE REFERENCE: PC-0047 CIP
                                                                                                                                                                                                       Patent No. US20020082211A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION: Alzheimer's Related Proteins TITLE OF INVENTION: Of Use FILE REFERENCE: 1034/IF810-US1 CURRENT APPLICATION NUMBER: US/10/071,900 CURRENT FILING DATE: 2002-02-08 PRIOR APPLICATION NUMBER: US/09/227,725 PRIOR APPLICATION NUMBER: US/09/227,725 PRIOR FILING DATE: 1999-01-08 NUMBER OF SEQ ID NOS: 4
LENGTH: 4
TYPE: PRT
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Pred. No. 0;
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US-09-785-474-2
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; OTHER INFORMATION: Incyte ID No. US20020082211A1 g1244638
US-09-895-035-12
                                                                                                                                                                                                                                                                           Sequence 2, Application US/09785474
Patent No. US20010012626A1
GENERAL INFORMATION:
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Best Local
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COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/785,474
FILING DATE: 20-Feb-2001
CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/706,344
FILING DATE: 30-AUG-1996
APPLICATION NUMBER: 60/003,054
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ADDRESSEE: STERNE, KESSLER, G
STREET: 1100 NEW YORK AVENUE,
                                                                                                                                                                                                                                  TITLE OF INVENTION: Genetic Alterations Related Alzheimer's Disease
                                                                                                                                                                                                                                                        APPLICANT: TANZI, RUDOLPH WASCO, WILMA
                                                                                                                                                                                                                          NUMBER OF SEQUENCES: 32
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437; Conserv
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STATE: DC
COUNTRY: USA
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Pred. No. 2e-304;
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RESULT 7
US-09-785-474-4
; Sequence 4, Application US/09785474
; Patent No. US20010012626A1
; GENERAL INFORMATION:
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MOLECULE TYPE: protein
SEQUENCE DESCRIPTION: SEQ
US-09-785-474-2
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SEQUENCE CHARACTERISTICS:
LENGTH: 467 amino acids
                CORRESPONDENCE ADDRESS:
ADDRESSEE: STERNE, KESSLER, GOLI
STREET: 1100 NEW YORK AVENUE, SI
CITY: WASHINGTON
STATE: DC
COUNTRY: USA
ZIP: 20005-3934
COMPUTER READABLE FORM:
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                                                                                                                                                                               NUMBER OF SEQUENCES: 32
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                                                                                                                                                                                                                  TITLE OF INVENTION: Genetic Alterations Related
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  MEDIUM
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TYPE: Floppy disk
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                                                                                                                                                                                                 Alzheimer's Disease
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Pred. No. 1e-237;
); Mismatches
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                                                                                                                                                                                                                                                                                                                                                            Sequence 28, Application Upatent No. US20010012626A1 GENERAL INFORMATION:
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Matches 204;
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NAME: KIM, JUDITH U.
REGISTRATION UNDBER: 40,679
REFERENCE/DOCKET NUMBER: 0609
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-371-2540
TELEFAX: 202-371-2540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MTELPAPLSYFQNAQMSEDNHLSNTVRSQNDNRERQEHNDRRSLGHPEPLSNGRPQGNSR 60
                  COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
                                                                                        ZIP: 20005-3934
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
ADDRESSEE: STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C
STREET: 1100 NEW YORK AVENUE, SUITE 600
                                                                                                                                                                                                                                                                  TITLE OF INVENTION: Genetic Alterations Related To Familial Alzheimer's Disease NUMBER OF SEQUENCES: 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOLECULE TYPE: protein SEQ ID NO: 4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY: linear MOLECULE TYPE: protei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS:
LENGTH: 467 amino acids
TYPE: amino acid
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                                                                                                                                                                                                                                                                                                                                            APPLICANT: TANZI, RUDOLPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DTETYGQRALHSILNAAIMISVIVVMTILLVVLYKYRCYKVIHAWLIISSLLLLFFFSFI 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QVVEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTPFTE 120
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OPERATING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: 08/706,344
FILING DATE: 30-AUG-1996
APPLICATION NUMBER: 60/003,054
FILING DATE: 31-AUG-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: US/09/785,474 FILING DATE: 20-Feb-2001 CLASSIFICATION: <Unknown>
                                                                                                                                                  COUNTRY: USA
                                                                                                                                                                        STATE: DC
                                                                                                                                                                                        CITY: WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE:
APPLICATION NUMBER: US/09/785,474
                                                                                                                                                                                                                                                                                                                                                                                                        Application US/09785474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FTWARE: PatentIn Release #1.0, Version #1.30 (EPO)
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                                                                                                                                  20005-3934
                                                                                                                                                                                                                                                                                                                              WASCO, WILMA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
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100.0%; Pr
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Pred. No. 3.5e-181;
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                                      Version
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                                    #1.30 (EPO)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 30, Application US/09785474 Patent No. US20010012626A1 GENERAL INFORMATION:
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TELEFAX: 202-371-2540
INFORMATION FOR SEQ ID NO: 28:
SEQUENCE CHARACTERISTICS:
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                                                ZIP: 20005-3934

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0, Ve:

CURRENT APPLICATION DATA:

APPLICATION UMBER: US/09/785,474

FILING DATE: 20-Feb-2001

CLASSIFICATION: CUNknown>
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                PRIOR APPLICATION DATA: 08/706,344
                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
ADDRESSEE: STERNE, KESSLER, GOLDSTEIN &
STREET: 1100 NEW YORK AVENUE, SUITE 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: 60/003,054
FILING DATE: 31-AUG-1995
ATTORNEY/AGENT INFORMATION:
NAME: KIM, JUDITH U.
                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: Genetic Alterations Related To Familial Alzheimer's Disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE DESCRIPTION: SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY: linear MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: TANZI, RUDOLPH WASCO, WILMA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QVVEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTPFTE 120
                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  YLGEVFKTYNVAVDYITVALLIWN 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DTETVGQRALHSILNAAIMISVIVVMTILLVVLYKYRCYKVIHAWLIISSLLLLFFFSFI 180
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        204;
                                                                                                                                                                                                                                                COUNTRY: USA
                                                                                                                                                                                                                                                                    STATE: DC
                                                                                                                                                                                                                                                                                    CITY: WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER: 0609.4180002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REGISTRATION NUMBER: 40,679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: 08/706,344 FILING DATE: 30-AUG-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE: 20-Feb-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 467 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
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Pred. No.
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                                                                                                                                Version #1.30 (EPO)
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Length 467; Indels

Gaps

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RESULT 10
US-09-785-474-32
US-09-785-474-32
; Sequence 32, Application US/09785474
; Patent No. US20010012626A1
; GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                  ATTORNEY/AGENT INFORMATION: NAME: KIM, JUDITH U.
                                                                                                                                      CLASSIFICATION: <Unknown> PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION: Genetic Alterations Related Alzheimer's Disease NUMBER OF SEQUENCES: 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE/DOCKET NUMBER: TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: TANZI, RUDOLPH
WASCO, WILMA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QVVEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTPFTE 120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MTELPAPLSYFQNAQMSEDNHLSNTVRSQNDNRERQEHNDRRSLGHPEPLSNGRPQGNSR 60
                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE: STERNE, KESSLER, GC
STREET: 1100 NEW YORK AVENUE,
CITY: WASHINGTON
STATE: DC
                                                    APPLICATION NUMBER: 60/003,054 FILING DATE: 31-AUG-1995
                                                                                              APPLICATION NUMBER: 08/706,344 FILING DATE: 30-AUG-1996
                                                                                                                                                                            APPLICATION NUMBER: US/09/785,474 FILING DATE: 20-Feb-2001
                                                                                                                                                                                                                                                                                                                                            COUNTRY: USA
ZIP: 20005-3934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: KIM, JUDITH U.
REGISTRATION NUMBER: 40,679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: 60/003,054 FILING DATE: 31-AUG-1995
REGISTRATION NUMBER: 40,679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE: 202-371-2600
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 467;
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GENERAL INFORMATION:
APPLICANT: Patterson, Chandra
APPLICANT: MUTTY, Lynn E.
APPLICANT: Kaser, Matthew R.
TITLE OF INVENTION: HUMAN PRESENILIN VARIANT
FILE REFERENCE: PC-0047 CIP
CURRENT APPLICATION NUMBER: US/09/895,035
CURRENT FILING DATE: 2001-06-29
PRIOR APPLICATION NUMBER: 097-16
PRIOR FILING DATE: 1998-07-16
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MOLECULE TYPE: Protein

SEQUENCE DESCRIPTION: SEQ ID NO: 32:
US-09-785-474-32
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                                                                                                                                                                                                                                                                                               ; NAME/KEY: misc_feature ; OTHER INFORMATION: Incyte ID No. US20020082211A1 1353337CD1 US-09-895-035-1
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US-09-895-035-1
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                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                      Query Match
Best Local Similarity
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQ ID NOS: 14
SOFTWARE: PERL Program
                                                                                                                                                                                                                                                                                                                                                       LENGTH: 180
TYPE: PRT
ORGANISM: Homo sapiens
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-371-2600
TELEFAX: 202-371-2540
INFORMATION FOR SEQ ID NO: 32:
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                                                                                TLCMVVVVATIKSVSFYTRKDGQLIYTPFTEDTETVGQRALHSILNAAIMISVIVVMTIL 149
                                                                                                                                                           NDNRERQEHNDRRSLGHPEPLSNGRPQGNSRQVVEQDEEEDEELTLKYGAKHVIMLFVPV 89
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                                                            TLCMVVVVATIKSVSFYTRKDGQLIYTPFTEDTETVGQRALHSILNAAIMISVIVVMTIL 145
                                                                                                                                     NDNRERQEHNDRRSLGHPEPLSNGRPQGNSRQVVEQDEEEDEELTLKYGAKHVIMLFVPV 85
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                                                                                                                                                                                                                28.3%; Score 132; DB 10; ilarity 100.0%; Pred. No. 7.6e-115; Conservative 0; Mismatches 0;
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US-09-864-761-38056
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; OTHER INFORMATION: Desc
US-09-823-153-8
                      PRIOR APPLICATION NUMBER: US 60/180,312
PRIOR FILING DATE: 2000-02-04
PRIOR PPLICATION NUMBER: US 60/207,456
PRIOR FILING DATE: 2000-05-26
PRIOR FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: US 09/632,366
PRIOR APPLICATION NUMBER: GB 24263.6
PRIOR APPLICATION NUMBER: GB 24263.6
PRIOR APPLICATION NUMBER: US 60/236,359
PRIOR APPLICATION NUMBER: US 60/236,359
PRIOR FILING DATE: 2000-09-27
                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
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LENGTH: 354
TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                            APPLICANT: Hanzel, David K.

APPLICANT: Chen, Wensheng
TITLE OF INVENTION: HUMAN GENOME-DERIVED SINGLE EXON NUCLEIC ACID PROBES USEFUL
TITLE OF INVENTION: GENE EXPRESSION ANALYSIS BY MICROARRAY
FILE REFERENCE: Accomica-X-1
CURRENT APPLICATION NUMBER: US/09/864,761
CURRENT FILING DATE: 2001-05-23
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                          APPLICANT: Penn, Sharron G.
APPLICANT: Rank, David R.
APPLICANT: Hanzel, David K
APPLICANT: Chen, Wensheng
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APPLICANT: Vinitsky, Alexander
TITLE OF INVENTION: ISOLATION OF FUNCTIONALLY ACTIVE GAMMA-SECRETASE PROTEIN COMPLEX
TITLE OF INVENTION: METHODS FOR DETECTION OF ACTIVITY AND INHIBITORS THEREOF
FILE REFERENCE: D0004
CURRENT APPLICATION NUMBER: US/09/823,153
CURRENT FILING DATE: 2001-07-02
NUMBER OF SEQ ID NOS: 11
SOFTWARE: Patentin version 3.0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        342 AQRDSHLGPHRSTPESRAAVQELSSSILAGEDPEERGVKLGLGDFIFYSVLVGKASATAS 401
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      APPLICATION
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AQRDSHLGPHRSTPESRAAVQELSSSILAGEDPEERGVKLGLGDFIFYSVLVGKASATAS 346
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27.4%; Score 128; DB 10; llarity 100.0%; Pred. No. 7.3e-111; Conservative 0; Mismatches 0;
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US-09-925-299-1227
; Sequence 1227, Application US/09925299
; Patent NO. US20020055627A1
; GENERAL INFORMATION:
; APPLICANT: Rosen et al.
; TITLE OF INVENTION: Nucleic Acids, Proteins and
; FILE REFERENCE: PA102
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                                   CURRENT APPLICATION NUMBER: US/09/925,299
CURRENT FILING DATE: 2001-08-10
PRIOR APPLICATION NUMBER: PCT/US00/05883
PRIOR FILING DATE: 2000-03-08
PRIOR PPLICATION NUMBER: 60/124,270
PRIOR PPLICATION NUMBER: 60/124,270
PRIOR FILING DATE: 1999-03-12
NUMBER: OF SEQ ID NOS: 1556
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US-09-864-761-38056
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Best Local
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                114 IYTPFTEDTETYGQRALHSILNAAIMISVIVVMTILLVVLYKYRCYKV 161
                                                                          Local Similarity es 48; Conserv
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APPLICATION NUMBER: PCT,
NATE: 2001-01-30
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APPLICATION NUMBER: PCT/US01/00668
FILING DATE: 2001-01-30
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IYTPFTEDTETVGQRALHSILNAAIMISVIVVMTILLVVLYKYRCYKV 48
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ESSED IN BT474, SIGNAL = 2.7
ESSED IN BRAIN, SIGNAL = 2.8
ESSED IN HELA, SIGNAL = 2.2
ESSED IN HEART, SIGNAL = 2.2
ESSED IN FETAL LIVER, SIGNAL = 2.2
ESSED IN LUNG, SIGNAL = 2.7
ESSED IN BONE MARROW, SIGNAL = 2.6
ESSED IN PLACENTA, SIGNAL = 3.2
ESSED IN PLACENTA, SIGNAL = 3.2
ESSED IN HBL100, SIGNAL = 3.2
ESSED IN ADULT LIVER, SIGNAL = 2.2
SPROT HIT: P97887, EVALUE 8.00e-12
SPROT HIT: BE935454.1, EVALUE 1.00e-18
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                                                                        Score 48; DB Pred. No. 2e-0; Mismatches
                                                                      DB 10; I
2e-37;
hes 0;
                                                                                                           Length 65;
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                                                                     ; ORGANISM: HOMO
US-09-754-949-6
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US-10-051-767-10
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                                                                                                                                                                                                                                                                                                                                                     RESULT 16
US-09-754-949-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-051-767-10
                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
APPLICANT: MCCARTHY, JUSTIN
APPLICANT: CORDELL, BARBAR
                                                                                                                                                                                                                                                                                                                  Sequence 6, Application US/09754949
Patent No. US20020015939A1
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                    Query Match
Best Local Similarity
                                                                                                                                    SEQ ID NO 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 10
LENGTH: 131
TYPE: PRT
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      Matches
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                                                                                                                                                                   CURRENT APPLICATION NUMBER: US/09/754,949
CURRENT FILING DATE: 2001-01-04
NUMBER OF SEQ ID NOS: 16
                                                                                                                                                                                                                    APPLICANT: CORDELL, BARBARA
TITLE OF INVENTION: METHODS FOR IDENTIFYING INHIBITORS OF
TITLE OF INVENTION: NEURONAL DEGENERATION
FILE REFERENCE: SCIOS.012A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION NUMBER: US/10/051,767
CURRENT FILING DATE: 2002-01-17
PRIOR APPLICATION NUMBER: 60/262,353
PRIOR FILING DATE: 2001-01-17
NUMBER OF SEQ ID NOS: 15
                                                                                                                                                    SOFTWARE: FastSEQ for Windows Version 4.0
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                                                                                                       TYPE: PRT
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OTHER INFORMATION: Description of Artificial Sequence:
OTHER INFORMATION: Peptide
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                                                                                                                     LENGTH: 448
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                                                                                                                                                                                                                                                                                                                                                                                                                                    253 ISVYDLVAVLCPKGPLRMLVETAQERNE 280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              279 NETLFPALIYSSTMVWLVNMAEGDPEAQRRVSKNSKYNAESTER 322
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Local Similarity 100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                    ISVYDLVAVLCPKGPLRMLVETAQERNE 37
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     28;
     Conservative
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                                                                                     Sapien
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                    6.0%;
; Score 28; DB 10; Le
%; Pred. No. 4.2e-18;
''4 amatches 0;
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                                  Length 448;
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В
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; TYPE: PRT
; ORGANISM: Homo Sapien
US-10-071-900-2
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US-10-071-900-2
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                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: :
SEQ ID NO 2
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                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: St. George-Hyslop, Peter H.
APPLICANT: Fraser, Johanna
APPLICANT: Fraser, Paul E.
TITLE OF INVENTION: Alzheimer's Related Proteins and Methods
TITLE OF INVENTION: of Use
TILE REFERENCE: 1034/1F810-US1
CURRENT APPLICATION NUMBER: US/10/071,900
CURRENT APPLICATION NUMBER: US/09/227,725
PRIOR APPLICATION NUMBER: US/09/227,725
PRIOR PILING DATE: 1999-01-08
PRIOR FILING DATE: 1999-01-08
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Best Local
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SOFTWARE: FastSEQ for Windows Version 3.0
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PRIOR FILING DATE: 2000-06-11
NUMBER OF SEQ ID NOS: 26
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Monteiro, et al. TITLE OF INVENTION: Method FILE REFERENCE: 4115-161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: PatentIn version 3.1
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253
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                                                                                                                                                Conservative
                                                                                                                                 6.0%; 50
100.0%; Pr
100.0%; 0;
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; Pred No.
                                                                                                                                                                                   Score 28;
Pred. No.
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hes 0;
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RESULT 19
US-10-051-767-9
; Sequence 9, Application US/10051767
; Publication No. US/20030022151A1
; GENERAL INFORMATION:

APPLICANT: THINAKARAN, GOPAL

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RESULT 20
US-10-051-767-15
; Sequence 15, Application US/10051767
; Publication No. US20030022151A1
; GENERAL INFORMATION:
GENERAL INFORMATION:
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US-10-051-767-11
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; OTHER INFORMATION:
US-10-051-767-15
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; OTHER INFORMATION:
US-10-051-767-9
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CURRENT FILING DATE: 2002-01-17
PRIOR APPLICATION NUMBER: 60/262,353
PRIOR FILING DATE: 2001-01-17
NUMBER OF SEQ ID NOS: 15
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 15
                                                                                                                                                                 Sequence 11, Application US/10051767
Publication No. US20030022151A1
GENERAL INFORMATION:
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Best Local 9
   SOFTWARE: PatentIn Ver. SEQ ID NO 11
                                                                                                                                                                                                                                                                                                                                                           Matches
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                                                                           APPLICANT: THINAKARAN, GOPAL
TITLE OF INVENTION: FUNCTIONAL SCREENING
FILE REFERENCE: ARCD:364US
CURRENT APPLICATION NUMBER: US/10/051,767
CURRENT FILING DATE: 2002-01-17
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                                                 PRIOR APPLICATION NUMBER: 60/262,353 PRIOR FILING DATE: 2001-01-17
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CURRENT FILLING DATE: 2002-01-17
PRIOR APPLICATION NUMBER: US/10/051,767
PRIOR APPLICATION NUMBER: 60/262,353
PRIOR FILING DATE: 2001-01-17
NUMBER OF SEQ ID NOS: 15
                                   NUMBER OF SEQ ID NOS: 15
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 74
TYPE: PRT
ORGANISM: Artificial Sequence
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TYPE: PRT
ORGANISM: Artificial Sequence
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ilarity 100.0%;
Conservative (
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Pred. No.
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Pred. No.
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2.8e-13;
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Query Match
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US-10-051-767-13
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                                                            SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 13
LENGTH: 166
TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                              Sequence 13, Application US/10051767
Publication No. US20030022151A1
GENERAL INFORMATION:
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APPLICANT: THINAKARAN, GOPAL
TITLE OF INVENTION: FUNCTIONAL SCREENING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: PatentIn Ver. SEQ ID NO 7
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Best Local Similarity 100.
Matches 22; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION NUMBER: US/10/051,767
CURRENT FILING DATE: 2002-01-17
PRIOR APPLICATION NUMBER: 60/262,353
PRIOR FILING DATE: 2001-01-17
NUMBER OF SEQ ID NOS: 15
                                                                                                                                                       PRIOR APPLICATION NUMBER: 60/262,353 PRIOR FILING DATE: 2001-01-17 NUMBER OF SEQ ID NOS: 15
                                                                                                                                                                                                         CURRENT APPLICATION NUMBER: US/10/051,767
CURRENT FILING DATE: 2002-01-17
                                                                                                                                                                                                                                            APPLICANT: THINAKARAN, GOPAL TITLE OF INVENTION: FUNCTIONAL SCREENING FILE REFERENCE: ARCD:364US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILE REFERENCE: ARCD: 364US
                OTHER INFORMATION: OTHER INFORMATION:
                                                 FEATURE:
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TYPE: PRT
ORGANISM: Artificial Sequence
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            Description of Artificial Sequence: Peptide
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100.0%; Pr
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3.98;

Score 18;

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Length 166;

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PRIOR APPLICATION NUMBER: 60/262,353
PRIOR FILING DATE: 2001-01-17
NUMBER OF SEQ ID NOS: 15
SOFTWARE: PATENTIN VET. 2.1
SEQ ID NO 12
LENGTH: 210
TYPE: PATENTIN VET. 2.1
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US-10-051-767-12
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                                                                                                 ; OTHER INFORMATION: Description of Artificial Sequence: US-09-823-153-6
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US-09-823-153-6
                                                 Duery Match
Best Local Similarity
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                                                                                                                                                                                                                  SEQ ID NO 6
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                                   Matches
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APPLICANT:
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APPLICANT: Vinitsky, Alexander
APPLICANV: Vinitsky, Alexander
APPLICANV: Vinitsky, Alexander
TITLE OF INVENTION: ISOLATION OF FUNCTIONALLY ACTIVE GAMMA-SECRETASE PROTEIN COMPLEX
TITLE OF INVENTION: METHODS FOR DETECTION OF ACTIVITY AND INHIBITORS THEREOF
FILE REFERENCE: DOUGH
CURRENT FILING LOTTON UMBER: US/09/823,153
CURRENT FILING DATE: 2001-07-02
NUMBER OF SEQ ID NOS: 11
SOFTWARE: Patentin version 3.0
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CURRENT APPLICATION NUMBER: US/10/051,767
CURRENT FILING DATE: 2002-01-17
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                                                                                                                                                                                     TYPE: PRT
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                                                                                                                                  NAME/KEY: misc_feature
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les 18; Conserv
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Smith, David
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100.0%;
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                              Score 16; DB; Pred. No. 2.6
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; NAME/KEY: misc_feature ; OTHER INFORMATION: Description of Artificial Sequence: US-09-823-153-5
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US-09-823-153-5
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LENGTH: 15
TYPE: PRT
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CURRENT FILING DATE: 2001-07-02
NUMBER OF SEQ ID NOS: 11
SOFTWARE: Patentin version 3.0
SEQ ID NO 5
LENGTH: 16
                                         Query Match
Best Local Similarity
Matches 15; Conserv
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APPLICANT: Hendrick, Joseph
APPLICANT: Vinitsky, Alexander
TITLE OF INVENTION: ISOLATION OF FUNCTIONALLY ACTIVE GAMMA-SECRETASE PROTEIN COMPL
TITLE OF INVENTION: METHODS FOR DETECTION OF ACTIVITY AND INHIBITORS THEREOF
FILE REFERENCE: D0004
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APPLICANT: Roberts, Susan
APPLICANT: Pak, Roger
APPLICANT: Lewis, Martin
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APPLICANT: Vinitsky, Alexander
TITLE OF INVENTION: ISOLATION OF FUNCTIONALLY ACTIVE GAMMA-SECRETASE PROTEIN COMPL
TITLE OF INVENTION: METHODS FOR DETECTION OF ACTIVITY AND INHIBITORS THEREOF
EILE REFERENCE: D0004
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CURRENT FILING DATE: 2001-07-02
NUMBER OF SEQ ID NOS: 11
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                                                                                                                                                                                                                                                                                                                                     TYPE: PRT ORGANISM: Artificial Sequence
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NAME/KEY: misc_feature
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Smith, David
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Smith, David
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100.0%; Score 15;
100.0%; Pred. No.
ltive 0; Mismar;
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Pred. No.
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                                                                                                                                     CURRENT APPLICATION NUMBER: US/09/796,264
CURRENT FILING DATE: 2001-02-28
PRIOR APPLICATION NUMBER: 09/604,608
PRIOR FILING DATE: 2000-06-27
PRIOR APPLICATION NUMBER: 60/168,060
PRIOR APPLICATION NUMBER: 60/177,836
PRIOR FILING DATE: 1999-11-30
PRIOR PRIOR DATE: 2000-01-25
PRIOR APPLICATION NUMBER: 60/178,368
PRIOR APPLICATION NUMBER: 60/178,368
PRIOR APPLICATION NUMBER: 60/178,368
PRIOR FILING DATE: 2000-01-27
PRIOR FILING DATE: 2000-01-27
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PRIOR FILING DATE: 1999-11-30
PRIOR APPLICATION NUMBER: 60/177,836
PRIOR FILING DATE: 2000-01-25
PRIOR APPLICATION NUMBER: 60/178,368
PRIOR FILING DATE: 2000-01-27
PRIOR APPLICATION NUMBER: 60/210,292
PRIOR FILING DATE: 2000-06-08
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Best Local Similarity 100.
                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
APPLICANT: Tang, Jordan J.N.
APPLICANT: Lin, Xinli
APPLICANT: Koelsch, Gerald
TITLE OF INVENTION: Catalytically Active Recombinant Memapsin and Methods
TITLE OF INVENTION: Of Use Thereof
FILE REFERENCE: OMRF 179
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PRIOR FILING DATE: 2000-06-08
NUMBER OF SEC ID NOS: 31
SOFTWARE: PATENTIN VEr. 2.1
SEC ID NO 9
LENGTH: 8
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
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APPLICANT: Lin, Xinli
APPLICANT: Lin, Xinli
APPLICANT: Koelsch, Gerald
TITLE OF INVENTION: Catalytically Active Recombinant Memapsin and Methods
TITLE OF INVENTION: of Use Thereof
FILE REFERENCE: OMRF 179
CURRENT APPLICATION NUMBER: US/09/795,903A
CURRENT FILING DATE: 2001.02-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT FILING DATE: 2001-02-28 PRIOR APPLICATION NUMBER: 09/604,608 PRIOR FILING DATE: 2000-06-27
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                                                                                                                    PRIOR APPLICATION NUMBER: 60/210,292
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TYPE: PRT
ORGANISM: Homo sapiens
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100.0%; Pred. No.
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US-09-982-172-103
; OTHER INFORMATION: Computer generated synthetic peptide US-09-982-172-103
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PRIOR APPLICATION NUMBER: 60/168,060

PRIOR FILING DATE: 1999-11-30

PRIOR APPLICATION NUMBER: 60/177,836

PRIOR FILING DATE: 2000-01-25

PRIOR APPLICATION NUMBER: 60/178,368

PRIOR FILING DATE: 2000-01-27

PRIOR APPLICATION NUMBER: 60/210,292

PRIOR FILING DATE: 2000-06-08
                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
APPLICANT: Emil Israel Katz
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Best Local Similarity 100
Matches 8; Conservative
                                                                                                                  SOFTWARE: PatentIn version 3.1 SEQ ID NO 103
                                                                                                                                                                                                                                                                                                                                   Sequence 103, Application US/09982172 Patent No. US20020137119A1
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LENGTH: 8
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Best Local
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                                                                                                                                                     TITLE OF INVENTION: PEPTIDES REPRESENTATIVE OF POLYPEPTIDES OF INTEREST AND ANTIBO
TITLE OF INVENTION: DIRECTED THEREGAINST, AND METHODS, SYSTEMS AND KITS FOR GENE.
TITLE OF INVENTION: UTILIZING EACH
FILE REFERENCE: 01/22283
CURRENT APPLICATION UMBER: US/09/982,172
CURRENT FILING DATE: 2001-10-19
NUMBER OF SEQ ID NOS: 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Tang, Jordan J.N.
APPLICANT: Hong, Lin
APPLICANT: Ghosh, Arun K.
APPLICANT: Ghosh, Arun K.
TITLE OF INVENTION: Inhibitors of Memapsin 2 and Use Thereof
FILE REFERENCE: OWAF 182
CURRENT APPLICATION NUMBER: US/09/845,226
CURRENT FILING DATE: 2001-04-30
PRIOR APPLICATION NUMBER: 09/603,713
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                                                                             LENGTH: 45
TYPE: PRT
                                          FEATURE:
                                                         ORGANISM: Artificial sequence
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tive 0; Mismatches
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                                                                                                                         ORGANISM: Mus musculus US-10-004-717-7
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Best Local Similarity
Thehes 8; Conserv
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APPLICANT: Emil Israel Katz

APPLICANT: Emil Israel Katz

TITLE OF INVENTION: PEPTIDES REPRESENTATIVE OF POLYPEPTIDES OF INTEREST AND ANTIBODII
TITLE OF INVENTION: DIRECTED THEREAGAINST, AND METHODS, SYSTEMS AND KITS FOR GENERA'
TITLE OF INVENTION: UTILIZING EACH

FILE REPERENCE: 01/22283

CURRENT APPLICATION NUMBER: US/09/982,172

CURRENT FILING DATE: 2001-10-19

RUMBER OF SEO ID NOS: 253
                                                                        Query Match
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SEQ ID NO 227
LENGTH: 45
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
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                                                                                                                                                                                                                                              PRIOR APPLICATION NUMBER: 09/585,645
PRIOR FILING DATE: 2000-06-01
PRIOR APPLICATION NUMBER: 60/176,993
PRIOR FILING DATE: 2000-01-19
PRIOR APPLICATION NUMBER: 60/137,060
PRIOR APPLICATION NUMBER: 60/137,060
PRIOR FILING DATE: 1999-06-01
                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE THERAPEUTIC USE OF TITLE OF INVENTION: ATONAL ASSOCIATED SEQUENCE FOR DEAFNESS, TITLE OF INVENTION: OSTEOARTHRITIS, AND ABNORMAL CELL PROLIFERATION FILE REPERENCE: P01899US4

CURRENT APPLICATION NUMBER: US/10/004,717

CURRENT FILING DATE: 2002-08-16
                                                                                                                                                                                                                SOFTWARE: PatentIn Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: ZOGHBI, H
                                                                                                                                                             LENGTH: 26
TYPE: PRT
                                                                                                                                                                                                                                   NUMBER OF SEQ ID NOS: 69
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ORGANISM: Artificial sequence
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66 DEEEDEEL 73
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25 LTLLLAI 32
                                                     local Similarity
les 8; Conser
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                                                       Conservative
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100.0%; Pred. No. 8.8;
ive 0; Mismatches
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Best Local Similarity
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; TYPE: PRT
; ORGANISM: Mus musculus
US-10-004-717-31
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                                                                                                                                                                                                              SEQ ID NO 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: PatentIn Ver. 2.1 SEQ ID NO 31
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Publication No.
                                                                    Matches
                                                                                   Query Match
Best Local
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SOFTWARE: PatentIn Ver. 2.1
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PRIOR FILING DATE: 2000-01-19
PRIOR APPLICATION NUMBER: 60/137,060
PRIOR FILING DATE: 1999-06-01
NUMBER OF SEQ ID NOS: 69
                                                                                                                                                                                                                                                                PRIOR APPLICATION NUMBER: 60/137,060 PRIOR FILING DATE: 1999-06-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: ZOGHBI, HI APPLICANT: YANG, QI
                                                                                                                                                                                                                                                                                                PRIOR APPLICATION NUMBER: 60/1 PRIOR FILING DATE: 2000-01-19
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                                                                                                                                                                                            LENGTH: 263
                66 DEEEDEEL 73
38 DEEEDEEL 45
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                                                                Similarity 100.0%; Pred. No. 8; Conservative
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                                                                    Mismatches
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TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE THERAPEUTIC USE OF TITLE OF INVENTION: ATONAL ASSOCIATED SEQUENCE FOR DEAFNESS,
TITLE OF INVENTION: OSTEOARTHRITIS, AND ABNORMAL CELL PROLIFERATION
FILE REFERENCE: PO1899US4
CURRENT APPLICATION NUMBER: US/10/004,717
CURRENT FILING DATE: 2002-08-16
PRIOR APPLICATION NUMBER: 09/585,645
PRIOR APPLICATION NUMBER: 09/585,645
PRIOR FILING DATE: 2000-06-01
                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION NUMBER: US/10/004,717
CURRENT FILING DATE: 2002-08-16
PRIOR APPLICATION NUMBER: 09/585,645
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DB 9;
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: LENGTH: 1272
: TYPE: PRT
: ORGANISM: RATTUS RATTUS
US-09-769-097-4
Query Match
Best Local Similarity
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US-09-769-097-4
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; TYPE: PRT
; ORGANISM: RATTUS RATTUS
US-09-769-097-2
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                                                                                                                                                                                                                                               CURRENT FILING DATE: 2001-01-25
PRIOR APPLICATION NUMBER: 09/208,809
PRIOR FILING DATE: 1998-12-09
PRIOR APPLICATION NUMBER: 09/156,800
PRIOR FILING DATE: 1999-09-17
PRIOR APPLICATION NUMBER: US99/20770
PRIOR FILING DATE: 1999-09-10
NUMBER OF SEQ ID NOS: 4
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 4, Application US/09769097 Patent No. US20020055128A1
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TITLE OF INVENTION: ENCODING RAT MDRIA AND SCREENING METHODS THEREOF
FILE REFERENCE: GP-50009-C2
CURRENT APPLICATION NUMBER: US/09/769,097
CURRENT FILING DATE: 2001-01-25
PRIOR APPLICATION NUMBER: 09/208,809
PRIOR FILING DATE: 1998-12-09
PRIOR FILING DATE: 1998-12-09
PRIOR FILING DATE: 1999-09-17
PRIOR APPLICATION NUMBER: 09/156,800
PRIOR FILING DATE: 1999-09-17
PRIOR APPLICATION NUMBER: US99/20770
PRIOR FILING DATE: 1999-09-10
SOFTWARE: FASUSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: POLYNUCLEOTIDE AND POLYPEPTIDE SEQUENCES TITLE OF INVENTION: ENCODING RAT MDRIA AND SCREENING METHODS THEREOF FILE REFERENCE: GP-50009-C2
CURRENT APPLICATION NUMBER: US/09/769,097
CURRENT FILING DATE: 2001-01-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Kimberly Anne Brun
APPLICANT: Richard James Chenery
APPLICANT: Harma Ellens
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APPLICANT: John Anthony Feild
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Lin Yue
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                   1.7%; Score 8; DB larity 100.0%; Pred. No. 39 Conservative 0; Mismatches
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5. 39;
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RESULT 38
US-09-866-866A-8
Sequence 8, Application US/09866866A
Patent No. US20020102244A1
GENERAL INFORMATION:
WESULT 40
US-10-044-671-2
Sequence 2, Application US/10044671
Sequence 2, Application US/10044671
Patent No. US20020177147A1
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CURRENT FILING DATE: 2001-08-30
PRIOR APPLICATION NUMBER: 09/584,586
PRIOR FILING DATE: 2000-05-31
PRIOR APPLICATION NUMBER: PCT/US99/11825
PRIOR FILING DATE: 1999-05-27
PRIOR FILING DATE: 1999-05-27
PRIOR FILING DATE: 1998-05-28
PRIOR FILING DATE: 1998-05-28
PRIOR FILING DATE: 1998-05-28
PRIOR FILING DATE: 1998-05-28
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                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 7
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Best Local Similarity
Matches 8; Conserv
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Best Local S
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APPLICANT: Connop, Bruce P.
APPLICANT: Pollard, Michelle
TITLE OF INVENTION: REGULATION OF AMYLOID PRECURSOR PROTEIN EXPRESSION
TITLE OF INVENTION: BY MODIFICATION OF ABC TRANSPORTER EXPRESSION OR ACTIVITY
FILE REFERENCE: 100103.402
CURRENT APPLICATION NUMBER: US/10/072,621
CURRENT FILING DATE: 2002-02-08
NUMBER OF SEQ ID NOS: 10
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TITLE OF INVENTION: A Method of Identifying and/or Isolating Stem Cells
FILE REFERENCE: 1340-1-0210TP2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Sorrentino, Brian APPLICANT: Schuetz, John
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TYPE: PRT
ORGANISM: Mus musculus
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ilarity 100.0%; Pred. No.
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Pred. No. 39;
Mismatches (
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GENERAL INFORMATION:

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Query Match
Best Local Similarity
Best Acades 8; Conserv.
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US-09-866-866A-2
             APPLICANT: Sorrentino, Brian
APPLICANT: Schuetz, John
TITLE OF INVENTION: A Method of Identifying and/or Isolating Stem Cells
FILE REFERENCE: 1340-1-021CIP2
                                                                                           |Sequence 4, Application US/09866866A
|Patent No. US20020102244A1
|GENERAL INFORMATION:
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SEQ ID NO 2
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CURRENT FILING DATE: 2001-08-30
PRIOR APPLICATION NUMBER: 09/584,586
PRIOR FILING DATE: 2000-05-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Schuetz, John
TITLE OF INVENTION: A Method of Identifying and/or Isolating Stem Cells
FILE REFERENCE: 1340-1-021CIP2
CURRENT APPLICATION NUMBER: US/09/866,866A
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PRIOR FILING DATE: 2001-08-24
NUMBER OF SEQ ID NOS: 10
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CURRENT FILING DATE: 2002-01-10
PRIOR APPLICATION NUMBER: US 60/261,578
PRIOR FILING DATE: 2001-01-12
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TITLE OF INVENTION: MDR1 VARIANTS AND METHODS FOR THEIR USE
FILE REFERENCE: 4630-61733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR FILING DATE:
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TYPE: PRT
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Pred. No.
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Query Match
Best Local Similarity
7; Conserv
                                                                                                                                                 ; OTHER INFORMATION: Description of Artificial Sequence: Synthetic; OTHER INFORMATION: Peptide US-09-795-903A-6
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US-09-795-903A-6
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PRIOR FILING DATE: 1999-11-30
PRIOR APPLICATION NUMBER: 60/177,836
PRIOR FILING DATE: 2000-01-25
PRIOR APPLICATION NUMBER: 60/178,368
PRIOR FILING DATE: 2000-01-27
PRIOR APPLICATION NUMBER: 60/210,292
PRIOR FILING DATE: 2000-06-08
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PRIOR APPLICATION NUMBER: 09/584,586
PRIOR TILING DATE: 2000-05-31
PRIOR APPLICATION NUMBER: PCT/US99/11825
PRIOR FILING DATE: 1999-05-27
PRIOR APPLICATION NUMBER: 60/086,988
PRIOR FILING DATE: 1998-05-28
PRIOR FILING DATE: 1998-05-28
PRIOR FILING DATE: 1998-05-28
PRIOR FILING DATE: 1998-05-28
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Best Local S
Matches 8
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SEQ ID NO 6
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Tang, Jordan J.N.
APPLICANT: Lin, Xinli
APPLICANT: Koelsch, Gerald
TITLE OF INVENTION: Catalytically Active Recombinant Memapsin and Methods
TITLE OF INVENTION: of Use Thereof
FILE REFERENCE: OMRF 179
CURRENT APPLICATION NUMBER: US/09/795,903A
CURRENT FILING DATE: 2001-02-28
PRIOR APPLICATION NUMBER: 09/604,608
PRIOR APPLICATION NUMBER: 09/604,608
PRIOR FILING DATE: 2000-06-27
PRIOR FILING DATE: 2000-06-27
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                                  296 VNMAEGD 302
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                                                                                                                                                                                                                        ORGANISM: Artificial Sequence
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RESULT 44
US-09-796-264-6
; Sequence 6, Application US/09796264
; Patent No. US20020049303A1
; GENERAL INFORMATION:
; APPLICANT: Tang, Jordan J.N.

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; OTHER INFORMATION: Description of Artificial Sequence: , OTHER INFORMATION: Peptide US-09-796-264-6
Query Match
Best Local Similarity
""" (Conserv)
                                                                                            ; OTHER INFORMATION:
; OTHER INFORMATION:
US-09-845-226-6
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PRIOR APPLICATION NUMBER: 60/168,060
PRIOR FILLING DATE: 1999-11-30
PRIOR APPLICATION NUMBER: 60/177,836
PRIOR FILLING DATE: 2000-01-25
PRIOR APPLICATION NUMBER: 60/178,368
PRIOR FILLING DATE: 2000-01-27
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Best Local Similarity 100.0%;
Matches 7; Conservative
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                                                                                                                                                                                                                                                       SOFTWARE: PatentIn Ver.
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PRIOR APPLICATION NUMBER: 60/210,292
PRIOR FILING DATE: 2000-06-08
NUMBER OF SEQ ID NOS: 31
                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION NUMBER: 60/168,060
PRIOR FILING DATE: 1999-11-30
PRIOR APPLICATION NUMBER: 60/177,836
PRIOR FILING DATE: 2000-01-25
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CURRENT FILING DATE: 2001-04-30
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APPLICANT: Hong, Lin
APPLICANT: Ghosh, Arun K.
TITLE OF INVENTION: Inhibitors of Memapsin 2 and
FILE REFERENCE: OMRF 182
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CURRENT FILING DATE: 2001-02-28
PRIOR APPLICATION NUMBER: 09/604,608
PRIOR FILING DATE: 2000-06-27
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PRIOR FILING DATE: 2000-06-27
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TITLE OF INVENTION: Catalytically Active Recombinant Memapsin and Methods
TITLE OF INVENTION: of Use Thereof
FILE REFERENCE: OMRF 179
                                                                                                                                                            LENGTH: 8
TYPE: PRT
ORGANISM: Artificial Sequence
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Pred. No. 1.1e+05;
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; OTHER INFORMATION: EXPRESSED IN BT474,
; OTHER INFORMATION: EXPRESSED IN HEART,
US-09-864-761-38169
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: Sequence 38169, Application US/09864761

: Patent No. US20020048763A1
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SOFTWARE: Annomax Sequence
SEQ ID NO 38169
                                                            Query Match
Best Local
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PRIOR FILING DATE: 2000-08-03
PRIOR APPLICATION NUMBER: GB 24263.6
PRIOR FILING DATE: 2000-10-04
PRIOR APPLICATION NUMBER: GB 24263.6
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CURRENT APPLICATION NUMBER: US/09/864,761
CURRENT FILING DATE: 2001-05-23
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PRIOR FILING DATE: 2000-02-04
PRIOR APPLICATION NUMBER: US 60/207,456
PRIOR FILING DATE: 2000-05-26
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PRIOR APPLICATION NUMBER: US 09/774,203
PRIOR FILING DATE: 2001-01-29
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PRIOR FILING DATE: 2001-01-30
PRIOR APPLICATION NUMBER: PCT/US01/00669
PRIOR FILING DATE: 2001-01-30
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PRIOR APPLICATION NUMBER: PCT/US01/00666
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APPLICATION NUMBER: PCT/US01/00663
FILING DATE: 2001-01-30
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APPLICATION NUMBER: PCT/US01/00668
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                                       Similarity
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Hanzel, David K.
Chen, Wensheng
                                         Conservative
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Pred. No.
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US-09-864-761-38937
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SEQ ID NO 38937
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PRIOR APPLICATION NUMBER: US 60/236,359
PRIOR APPLICATION NUMBER: 05 60/236,359
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PRIOR FILING DATE: 2000-09-21
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PRIOR FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: US 09/632,366
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PRIOR APPLICATION NUMBER: GB 24263.6
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CURRENT FILING DATE: 2001-05-23
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ORGANISM: Homo sapiens
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OTHER INFORMATION:
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FILING DATE: 2001-01-30
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APPLICATION NUMBER: PCT/US01/00667
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Rank, David R.
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EXPRESSED IN PLACE EXPRESSED IN LUNG
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ED IN LUNG, SIGNAL = 3.3
ED IN HEART, SIGNAL = 3.2
ED IN HEART, SIGNAL = 2.5
ED IN BONE MARROW, SIGNAL = 2.7
ED IN FETAL LIVER, SIGNAL = 2.6
ED IN BRAIN, SIGNAL = 2.9
ED IN ADULT LIVER, SIGNAL = 2.9
ED IN ADULT LIVER, SIGNAL = 2.9
EN HIT: BE018257.1, EVALUE 9.00e-21
DT HIT: Q01970, EVALUE 7.00e-22
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; FEATURE:
; NAME/KEY: SITE
; LOCATION: (18)
; OTHER INFORMATION: Xaa equals any of the naturally occurring
US-09-764-869-1215
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LENGTH: 58
TYPE: PRT
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Patent No.
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Best Local
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Best Local Similarity
Matches 7; Conserv
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EARLIER APPLICATION NUMBER: US/09/166,780
EARLIER FILING DATE: 1998-10-06
EARLIER APPLICATION NUMBER: PCT/US98/06801
EARLIER FILING DATE: 1998-04-07
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CURRENT FILING DATE: 2001-01-17
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TITLE OF INVENTION: Nucleic Acids, Proteins,
FILE REFERENCE: PC007
EARLIER APPLICATION NUMBER: 60/048,184 EARLIER FILING DATE: 1997-05-30
                                EARLIER APPLICATION NUMBER: 60/048,070 EARLIER FILING DATE: 1997-05-30
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                                                                                                                                                                                             EARLIER
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                                                                                                   APPLICATION NUMBER: 60/042,825 FILING DATE: 1997-04-08
                                                                                                                                     APPLICATION NUMBER: 60/042,728
FILING DATE: 1997-04-08
APPLICATION NUMBER: 60/042,754
FILING DATE: 1997-04-08
                                                                                                                                                                                                         APPLICATION NUMBER: 60/042,727 FILING DATE: 1997-04-08
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o. US20020058307A1
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SEQ ID NO 39
LENGTH: 64
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CURRENT APPLICATION NUMBER: US/09/864,761
CURRENT FILING DATE: 2001-05-23
PRIOR APPLICATION NUMBER: US 60/180,312
PRIOR TILING DATE: 2000-02-04
PRIOR FILING DATE: US 60/207,456
PRIOR FILING DATE: 2000-05-26
PRIOR FILING DATE: 2000-05-26
                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION NUMBER: PCT/US01/00664
PRIOR FILING DATE: 2001-01-30
PRIOR APPLICATION NUMBER: PCT/US01/00669
PRIOR FILING DATE: 2001-01-30
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PRIOR FILING DATE: 2001-01-30
PRIOR APPLICATION NUMBER: PCT/US01/00667
PRIOR FILING DATE: 2001-01-30
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PRIOR FILING DATE: 2000-10-04
PRIOR APPLICATION NUMBER: US 60/236,359
PRIOR FILING DATE: 2000-09-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Chen, Wensheng
TITLE OF INVENTION: GENE EXPRESSION ANALYSIS BY MICROARRAY
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NAME/KEY: SITE
LOCATION: (51)
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LOCATION: (38)
OTHER INFORMATION:
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ICR APPLICATION NUMBER: PCT/USO1/00665

OR FILING DATE: 2001-01-30

FOR APPLICATION NUMBER: PCT/USO1/00668

OR FILING DATE: 2001-01-30

FOR APPLICATION NUMBER: PCT/USO1/00663

FOR APPLICATION NUMBER: PCT/USO1/00662

FOR APPLICATION NUMBER: PCT/USO1/00662

FOR APPLICATION NUMBER: PCT/USO1/00661

FOR APPLICATION NUMBER: PCT/USO1/00670

FOR APPLICATION NUMBER: PCT/USO1/00670

FOR APPLICATION NUMBER: PCT/USO1/00670

FOR FILING DATE: 2001-01-30

FOR APPLICATION NUMBER: US 09/34,687

FOR APPLICATION NUMBER: US 09/508,408

FOR APPLICATION NUMBER: US 09/608,408

FOR APPLICATION NUMBER: US 09/608,408

FOR APPLICATION NUMBER: US 09/608,408
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Hanzel, David K.
Chen, Wensheng
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Search completed: February Job time: 41.4398 secs
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NUMBER OF SEQ ID NOS: 49117
SOFTWARE: Annomax Sequence Listing Engine vers.
SEQ ID NO 47359
LENGTH: 67
                                                                                                          Matches
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Best Local :
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ORGANISM: Homo sapiens
FEATURE:
FEATURE:
OTHER INFORMATION: MAP TO ACOUSTICE INFORMATION: EXPRESSED INFORMATION: EXPRESSED INFORMATION: SWISSPROT HI
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HIT: P21439, EVALUE 2.00e-27
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A; Molecule type: mrNA
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A; Experimental source: Dami megakaryotic cell line (ATCC CRL-9792) and plate C; Genetics:
A; Gene: GDB:PSEN1; AD3; FAD; S182; PS1
A; Cross-references: GDB:135682; OMIM:104311
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N;Alternate names: Alzhelmer's disease protein 3; protein S182

C;Species: Homo sapiens (man)

C;Date: 29-Jan-1998 #sequence_revision 13-Feb-1998 #text_change 29-Sep-1999

C;Accession: S58396; S71401; S71402

R;Sherrington, R.; Rogaev, E.I.; Liang, Y.; Rogaeva, E.A.; Levesque, G.; Ikeero, I.; Pinessi, L.; Nee, L.; Chumakov, I.; Pollen, D.; Brookes, A.; Sansee

E.; Rommens, J.M.; St George-Hyslop P.H.

Nature 375, 754-760, 1995

A;Title: Cloning of a gene bearing missense mutations in early-onset familia

A;Reference number: I58095; MUID:95319502; PMID:7596406

A;Accession: S58396
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                                                                                                                                                                                                                                                                                         437;
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C;Species: Homo sapiens (man)
C;Date: 20-Jul-1996 #sequence_revision 13-Mar-1997 #text_change 29-Sep-1999
C;Accession: $63683
R;Sahara, N.; Yahagi, Y.; Takagi, H.; Kondo, T.; Okochi, M.; Usami, M.; Shir FEBS Lett. 381, 7-11, 1996
A;Title: Identification and characterization of presentlin I-467, I-463 and A;Reference number: $63683; MUID:96193901; PMID:8641442
A;Accession: $63683
A;Status: preliminary; nucleic acid sequence not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: mRNĀ
A; Residues: I · 463 < SSH>
A; Cross references: EMBL: U40379;
C; Superfamily: presenilin
                                                                              MISIHWKGPLRLQQAYLIMISALMALVEIKYLPEWTAWLILAVISVYDLVAVLCPKGPLR
                                                                                                                                                                                                                                                      TLCMVVVVATIKSVSFYTRKDGQLIYTPFTEDTETVGQRALHSILNAAIMISVIVVMTIL 149
                                                                                                                                                                                                                                                                                                                                                          NDNRERQEHNDRRSLGHPEPLSNGRPQGNSRQVVEQDEEEDEELTLKYGAKHVIMLFVPV
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                     MLVETAQERNETLFPALIYSSTMVWLVNMAEGDPEAQRRVSKNSKYNAESTERESQDTVA
                                                                                                                                                                 LVVLYKYRCYKVIHAWLIISSLLLLFFFSFIYLGEVFKTYNVAVDYITVALLIWNLGVVG
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72.2%;
99.8%;
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                                                                                                                                                                                                                                                                                                                                                                                                                       Score 337;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
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presentlin 1, splice form 374 - human
N;Alternate names: Alzheimer's disease protein 3
C:Species: Homo sapiens (man)
C:Date: 20-Jul-1996 #sequence_revision 13-Mar-1997 #text_change 29-Sep-1999
C:Accession: S63684
R:Sahara, N; Yahaqi, Y; Takaqi, H.; Kondo, T.; Okochi, M.; Usami, M.; Shi
                                                                                                                                    RESULT 4
JC5081
A:Title: Molecular cloning, A:Reference number: JC5080; A;Contents: brain
           R;Calenda, A.; Mestre-Frances, N.; Czech, C.; Pradier, L.; Petter, A.; Bons, N. Blochem. Blophys. Res. Commun. 228, 430-439, 1996
A;Title: Molecular cloning, sequencing, and brain expression of the presentiin A;Reference number: JC5080; MUID:97079199; PMID:8920931
                                                                     presenilin 1 protein isoform 463 - lesser mouse lemur
C;Species: Microcebus murinus (lesser mouse lemur)
C;Date: 31-Jan-1997 #sequence_revision 31-Jan-1997 #text_change 13-Sep-1998
C;Accession: JC5081
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A; Map position: 14q;
C; Superfamily: prese
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C;Genetics:
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A; Residues: 1-374 <SAH>
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erfamily: presenting
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DYLVQPEMDQLAFHQFYI 467
                                                                                                                                                                                                                   MLVETAQERNETLFPALIYSSTMVWLVNMAEGDPEAQRRVSKNSKYNAE 318
                                                                                                                                                                                                                                                                MISIHWKGPLRLQQAYLIMISALMALVFIKYLPEWTAWLILAVISVYDLVAVLCPKGPLR
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R;Calenda, A.; Mestre-Frances, N.; Czech, C.; Pradier, L.; Pe Biochem. Biophys. Res. Commun. 228, 430-439, 1996
A;Title: Molecular cloning, sequencing, and brain expression A;Reference number: JC5080; MUID:97079199; PMID:8920931
A;Accession: JC5080
A;Status: nucleic acid sequence not shown
                                                                                                                                                          C:Superfamily: presenilin
(Keywords: transmembrane protein
(Keywords: transmembrane #status p
F:82-100/Domain: transmembrane #status
F:133-154/Domain: transmembrane #status
F:164-185/Domain: transmembrane #status
F:195-213/Domain: transmembrane #status
F:221-238/Domain: transmembrane #status
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C; Superfamily: presentlin
C; Keywords: transmembrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       presentlin 1 protein isoform 467 - lesser mouse lemur
C;Species: Microcebus murinus (lesser mouse lemur)
C;Date: 31-Jan-1997 #sequence_revision 31-Jan-1997 #t
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C;Comment: This protein is an i
                                                                                                                               F; 244-261/Domain: F; 408-428/Domain:
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                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: mRNA
A; Residues: 1-467 < CAL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C; Accession: JC5080
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F;240-257/Domain:
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                                                              Query Match
Best Local S
Matches 107
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 206
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                                                                              Score 107;
Pred. No.
                                                                  Mismatches
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s predicted <TM2>
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s predicted <TM2>
s predicted <TM3>
s predicted <TM4>
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                                                                            5.4e-96;
                                                                                               DB 2;
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s 0;
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                                                                                                                                                                                                                                                                                                                            protein with
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<TM5>
<TM6>
<TM7>
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                                                                                             Length 467;
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                                                                Indels
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266 266

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C;Accession: I78388

R;Sherrington, R.; Rogaev, E.I.; Liang, Y.; Rogaeva, E.A.; Levesque, G.; Ikeda, M.; Chiero, I.; Pinessi, L.; Nee, L.; Chumakov, I.; Pollen, D.; Brookes, A.; Sanseau, P.; Pollie, E.; Rommens, J.M.; St George-Hyslop, P.H.

Nature 375, 754-760, 1995

A;Title: Cloning of a gene bearing missense mutations in early-onset familial Alzheimer A;Ritle: Cloning of a gene bearing missense mutations in early-onset familial Alzheimer A;Reference number: 158095; MUID:95319502; PMID:7596406

A;Accession: 178388

A;Accession: 178388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     presenilin-alpha - African clawed frog C;Species: Xenopus laevis (African clawed frog) C;Date: 04-Jun-1997 #sequence_revision 18-Jul-1997 #text_change 20-Jun-2000 C;Accession: JC5390 R;Tsujimura, A.; Yasojima, K.; Hashimoto-Gotoh, T. Blochem. Blophys. Res. Commun. 231, 392-396, 1997 Blochem. Blophys. Res. Commun. 231, 392-396, 1997 A;Title: Cloning of Xenopus presenilin-alpha and -beta cDNAs and their diffe A;Reference number: JC5390; MUID:97223465; PMID:9070286 A;Accession: JC5390
seven trans-membrane
C; Species: Homo sapie
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                                                                                                                                                                                                                                                                                                                                                                                               F;130-149/Domain: transmembrane #status predicted <TM3>F;161-178/Domain: transmembrane #status predicted <TM4>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Experimental source: brain C; Comment: This protein plays a role in negative regulation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: mRNA
A; Residues: 1-433 <TSU>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: mRNA
A; Residues: 1-467 < RES>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C; Species: Mus musculus (house mouse)
C; Date: 27-Feb-1997 #sequence_revision
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Cross-references: DDBJ:D84427; NID:g1944353; PIDN:BAA19570.1; PID:g1944354
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                                                  139174
                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                               Best Local
                                                                                                                                                                                                                                                                                                                           :187-203/Domain: transmembrane #status predicted
:210-227/Domain: transmembrane #status predicted
:374-394/Domain: transmembrane #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                             99-119/Domain: transmembrane #status predicted <TM2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Superfamily: presenilin #status predicted <TMl>
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                                                                                                                                              375
                                                                                                                                                                                    409 ACEVAILIGLCLTLLLLAIEKKALPALPISITEGLVEYFATDYLVQPEMDQLAFHQFYI 467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           273 ETAQERNETLEPALIYSSTMYWLVNMAEGDPEAQRRV 309
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97; Conserv
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Pred. No. 3.4e-49;
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Pred. No.
                          AD3LP/AD5
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1 <TM6>
1 <TM7>
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R:Li, J.; Ma, J.; Potter, H.
Proc. Natl. Acad. Sci. U.S.A. 92, 12180-12184, 1995
A:Title: Identification and expression analysis of a potential A:Reference number: I39174; MUID:96109229; PMID:8618867
A:Accession: I39174
R;Tsujimura, A.; Yasojima, K.; Hashimoto-Gotoh, T. Biochem. Biophys. Res. Commun. 231, 392-396, 1997 A;Title: Cloning of Xenopus presenilin-alpha and -beta A;Reference number: JC5390; MUID:97223465; PMID:9070286
                                                                                                          C;Species: Xenopus laevis (African clawed frog) C;Date: 04-Jun-1997 #sequence_revision 18-Jul-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Map position: 1q31-1q42
C; Superfamily: presentlin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Cross-references: GB:L43964; NID:g951202; PIDN:AAB59557.1; PID:g951203 R;Rogaev, E.I.; Sherrington, R.; Rogaeva, E.A.; Levesque, G.; Ikeda, M.; Cohen, D.; Lannfelt, L.; Fraser, P.E.; Rommens, J.M.; St George-Hyslo; Nature 376, 775-778, 1995
                                                                                        C; Accession: JC5391
                                                                                                                                                                                                                                                                     DЬ
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A; Residues: 1-122, 'P', 124-448 < RE2>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Title: Familial Alzheimer's disease in kindreds with missense mutations in a A;Reference number: I58098; MUID:95379971; PMID:7651536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R; Levy-Lahad, E; Wasco, W
Science 269, 973-977, 1995
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N;Alternate names: Alzheimer's disease protein
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A; Residues: 1-442 <RES>
A; Cross_references: EMBL: U34349; NID: g1079575; PIDN: AAC50290.1;
                                                                                                                                                      presenilin-beta - African clawed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Cross-references:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Gene: GDB: PSEN2; AD4; STM2; PS2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: GB:L44577; NID:g950347; PIDN:AAC42012.1; PID:g950348
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A; Residues: 1-448 < RES>
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Best Local
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                                                                                                                                                                                                                                                                259 ISVYDLVAVLCPKGPLRMLVETAQERNE 286
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               W.; Poorkaj, P.; Romano, D.M.; Oshima, J.; Pettingell,
                                                                                                                                                                                                                                                                                                                                                                           6.0%;
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                                                                                                                                                                                                                                                                                                                                                                           Score 28;
Pred. No.
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6.3e-1
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                                                                                                          #text_change
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yslop, P.H.
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C;Genetics:
A;Gene: F35
A;Map posit
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sel-12 protein - Caenorhabditis elegans
C:Species: Caenorhabditis elegans
C:Date: 10-Apr-1996 #sequence_revision 19-Apr-1996 #text_change 13-Sep-1998
C:Accession: $60253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              F:142-162/Domain: transmembrane #status predicted F:173-192/Domain: transmembrane #status predicted F:204-221/Domain: transmembrane #status predicted F:230-246/Domain: transmembrane #status predicted F:252-279/Domain: transmembrane #status predicted F:390-410/Domain: transmembrane #status predicted
                                                                           A; Molecule type: DNA
A; Residues: 1-836 <STO>
A; Cross-references: GB:
                                                                                                                                                                      A;Title: Genome sequence of the nematode C. elegans: a platform for investigating biolog A;Reference number: A75000; MUID:99069613; PMID:9851916
A;Note: see websites genome.wustl.edu/gsc/C_elegans/ and www_sanger.ac.uk/Projects/C_ele A;Note: published errata appeared in Science 283, 35, 1999; Science 283, 2103, 1999; and
                                                                                                                                                                                                                                                                                            protein F35H12.3 [imported] - Caenorhabditis elegans
C;SpecLes: Caenorhabditis elegans
C;Date: 10-May-2001 #sequence_revision 10-May-2001 #t
C;Accession: E89453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;MOLECULE type: mRNA
A;Residues: 1-461 <LEV>
A;Cross-references: EMBL:U35660
C;Superfamily: presentlin
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A:Status: nucleic acid sequence not shown
A:Status: nucleic acid sequence not shown
A:Molecule type: mRNA
A:Residues: 1-449 <TSU>
A:Cross-references: DBJ:D84428; NID:g1944355; PIDN:BAA19571.1; PID:g1944356
A:Experimental source: brain
                                                                                                                                     A:Note: published errata appeared A:Accession: E89453 A:Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A:Title: Facilitation of lin-12-mediated signalling by A:Reference number: S60253; MUID:96032531; PMID:7566091 A:Accession: S60253 A:Accession: S60253 A:Accession: S60253
                                                         A; Note: similar to M.
                                                                                                                                                                                                                                                        R;anonymous, The C. elegans Sequencing Consortium. Science 282, 2012-2018, 1998
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  e: F35H12.3
position: 1
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27; Conserv
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                                                         GB:chr_X; PIDN:AAA83176.1; PID:g1109863; GSPDB:GN00028; CESP:F35H12
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J. 3.7e-09;
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A; Map position: 1
A; Introns: 108/1
C; Superfamily: presenilin
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A;Title: Sequence and analysis of chromosome 2 of the plant Arabidopsis thaliana. A;Reference number: A84420; MUID:20083487; PMID:10617197

A;Accession: A84702
Db
                                                                                                                                                                                                                                                 A; Molecule type: DNA
A; Residues: 1-453 <SHI>
A; Cross-references: EMB
                                                                                                                                                                                                                                                                                                                                                          submitted to the EMBL Data Library, submitted to the EMBL Data Library,
                                                                                                                                                                                                                                                                                                                                                                                                R;Shinn, P.; Buehler, eologis, A.; Ecker, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                               presenilin homolog F22013.19 - Arabidopsis thaliana
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 12-Feb-1999 #sequence_revision 12-Feb-1999 #text_change 22-Oct-1999
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C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 02-Feb-2001 #sequence_revision 02-Feb-2001 #text_change 16-Feb-2001
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A; Molecule type: DNA
A; Residues: 1-397 <STO>
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A; Accession: T00724
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Best Local S
Matches 15
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Best Local
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Best Local Similarity 100.
Matches 18; Conservative
                                                                       Matches
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                                                                       Conservative
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100.0%;
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Pred. No.
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Pred. No.
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Arabidopsis thaliana
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J. 6.3e-09;
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2.7e-06;
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RESULT

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C;Species: Escherichia coli
C;Date: 18-Jul-2001 #sequence_revision 18-Jul-2001 #text_change 03-Aug-2001
C;Accession: B91079
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A:Description: Sulfolobus solfataricus complete genome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C:Species: Sulfolobus solfataricus C:Date: 24-May-2001 #text_change 24-May-2001 C:Accession: G90492
                                                                                                      A; Title: Complete genome sequence of enterohemorrhagic Escherichia coli 0157:H7 and genous A; Reference number: A99629; MUID:21156231; PMID:11258796
A; Accession: B91079
                                                                                                                                                                   gasawara, N.; Yasunaga,
DNA Res. 8, 11-22, 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Experimental C; Superfamily:
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A.; Rose, D.J.; Mau, B.; Shao, Y.
Science 277, 1453-1462, 1997
A;Title: The complete genome sequence of Escherichia coli K-12
A;Reference number: A64720; MUID:97426617; PMID:9278503
A;Accession: H65055
A;Molecule type: DNA
A;Residues: 1-103 <HAY>
A;Cross-references: GB:BA000007; PIDN:BAB37025.1; PID:g13363073; GSPDB:GN00154
A;Experimental source: strain 0157:H7, substrain RIMD 0509952
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C;Date: 12-Sep-1997 #sequence_revision 17-Sep-1997 #text_change 01-Mar-2002
C;Accession: H65055
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A;Molecule type: DNA
A;Residues: 1-334 <KUR>
                                                                                   A; Status: preliminary
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A; Residues: 1-103 <BLAT>
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A; Accession: G90492
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Matches 9
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Yasunaga, T.; Kuhara, S.;
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Y.
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Pred. No.
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Pred. No.
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Shiba, T.; Hattori, M.; Shinagawa, H.
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C; Superfamily:
                                                                                                                         A; Molecule type: DNA
A; Residues: 1-176 < PEE>
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Best Local
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Best Local Similarity
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4 LTLLLAI 11
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A;Molecule type: DNA
A;Residues: 1-176 <HO1>
A;Residues: 1-176 <HO1>
A;Cross-references: GB:L12454; NID:g499666; PIDN:AAA40732.1; PID:g499667
A;Note: sequence extracted from NCBI backbone (NCBIN:140973, NCBIP:140974)
R;Peeters, B.
A;Cross-references: EMBL:Z13993; NID:g56965; PIDN:CAA78384.1; PID:g56966 R;Ho, K.C.; Snoek, R.; Quarmby, V.; Viskochil, D.H.; Rennie, P.S.; Wilsor Blochemistry 28, 6367-6373, 1989
A;Title: Primary structure and androgen regulation of a 20-kilodalton pro A;Reference number: A32819; MUID:90001187; PMID:2477055
A;Accession: A32819
                                                                                                                                                                                                                                                                               submitted to the EMBL Data Library, July 1992 A; Reference number: S29944 A; Accession: S29944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C;Date: 06-Oct-1994 #sequence_revision 18-Nov-1994 #text_change 20-Apr-2001 C;Accession: A49304; S29944; A32819; JT0615; A34552; A49200; S38813 R;HO, K.C.; Marschke, K.B.; Tan, J.; Power, S.G.; Wilson, E.M.; French, F.S. J. Biol. Chem. 268, 27226-27235, 1993
A;Title: A complex response element in intron 1 of the androgen-regulated 20-kDa A;Reference number: A49304; MUID:94086539; PMID:8262963
A;Accession: A49304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ventral prostate major secretory protein, 20K - rat
N;Alternate names: 22K glycoprotein, prostatic; cystatin-related protein 1
C;Species: Rattus norvegicus (Norway rat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;MoLecule type: DNA
A;Residues: 1-103 <STO>
A;Cross-references: GB:AE005174; NID:g12517202; PIDN:AAG57855.1; GSPDB:GN00145; UWGP:
A;Experimental source: strain O157:H7, substrain EDL933
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R;Perma, N.T.; Plunkett III, G.; Burland, V.; Mau, B.; Glasner, iller, L.; Grotbeck, E.J.; Davis, N.W.; Lim, A.; Dimalanta, E.; Nature 409, 529-533, 2001
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C;Date: 16-Feb-2001 #sequence_revision 16-Feb-2001 #text_change 14-Sep-2001
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A; Reference number: A85480; MUID:21074935; PMID:11206551
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C;Species: Escherichia coli
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; Pred. No.
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Pred. No. 5.5;
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                                                                                                                               .S.; Wilson,
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A;Gene:
C;Superf
C;Keywor
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Blosci. Biotechnol. Blochem. 64, 1394-1401, 2000
A:Title: Cloning, sequencing, and expression of the A:Reference number: JC7335
A:Accession: JC7335
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A;Residues: 'MQ',25-176 <HOK>
A;Residues: 'MQ',25-176 <HOK>
A;Cross-references: GB:M27901; NID:g530166; PIDN:AAA42345.1; PID:g530167
R;Devos, A.; De Clercq, N.; Vercaeren, I.; Heyns, W.; Rombauts, W.; Peeters, B.
Gene 125, 159-167, 1993
A;Title: Structure of rat genes encoding androgen-regulated cystatin-related proteins
A;Reference number: JT0615; MUID:93216117; PMID:8462870
A;Accession: JT0615
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A;Molecule type: mRNA
A;Residues: 137-156,'V',158-176 <VER>
A;Cross-references: EMBL:Z13993
A;Experimental source: Wistar albino
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R;Vercaeren, I.; Winderickx, J.; Devos, A.; Peeters, B.; Heyns, W.
Endocrinology 132, 2496-2502, 1993
A;Title: An effect of androgens on the length of the poly(A)-tail and alternative splicing A;Reference number: A49200; MUID:93178358; PMID:7679983
A;Reference number: A49200; MUID:93178358; PMID:7679983
                                                                                                                                                                                                                                                                                                                                         C;Comment: This enzyme, a member of class III or protection against fungal pathogens.
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C;Species: Conus tulipa (tulip cone)
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A:Introns: 79/3; 111/3; 149/3
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A; Residues: 1-156,'V',158-176 <WIN>
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                                                                                                                                                                                                                   Keywords:
                                                                                                                                                                                                                                                       Superfamily: alcohol sulfotransferase
                                                                                                                                                                                                                                                                                                                  Genetics
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Best Local :
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SSLLLLFF 176
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                                                                                                                        Score 8;
Pred. No.
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15;
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                                                                                                                                                                                                                                                                                                                                                                         plant chitinases, which catalyzes the
                                                                                                                                                     2;
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                                                                                                                                                     Length 314;
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A; Residues: 1-317 < KUR>
A; Cross-references: GB:
                                                                                                                        C; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Gene: DR2600
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A; Residues: 1-347 <WHI>
                          A; Reference number:
                                                                                                                                                                                                                                                    T39599
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8; Conser
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conserved hypothetical protein SPBC16G5.07c -
C;Species: Schizosaccharomyces pombe
C;Date: 03-Dec-1999 #sequence_revision 03-Dec-
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Science 286, 1571-1577, 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R;Parkhill, J.; Wren, B.W.; Thomson, N.R.; Titball, R.W.; Holden, M.T.G.; Prentice, M. deno-Tarzaga, A.M.; Chillingworth, T.; Cronin, A.; Davies, R.M.; Davis, P.; Dougan, G. il, M.; Rutherford, K.; Simmonds, M.; Skelton, J.; Stevens, K.; Whitehead, S.; Barrel Nature 413, 523-527, 2001
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R;Lyne, M.; Wood, V.; Rajandream, M.A.; Barrell, submitted to the EMBL Data Library, May 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Title: Genome sequence of the radioresistant bacterium Deinococcus radiodurans A;Reference number: A75250; MUID:20036896; PMID:10567266 A;Accession: H75253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     hypothetical protein - Deinococcus radiodurans (strain R1)
C;Species: Deinococcus radiodurans
C;Date: 03-Dec-1999  #sequence_revision 03-Dec-1999  #text_change 31-Mar-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Title: Genome sequence of Yersinia pestis, the causative A;Reference number: AB0001; MUID:21470413; PMID:11586360 A;Accession: AP0205 A;Status: preliminary
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GB:AL590842; PIDN:CAC90506.1; PID:g15979716;
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100.0%;
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15;
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16;
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                       B.G.;
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                       Α.,
                                                                18-Feb-2000
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A; Molecule type: DNA
A; Residues: 1-581 < KUR>
A; Cross references: GB:AE001437; PIDN:AAK79740.1;
A; Experimental source: Clostridium acetobutylicum
                                                                                                                                                                                                                                                                           R;Nolling, J.; Breton, G.; Omelchenko, M.V.; Markarova, K.S.; Daly, M.J.; Bennett, G.N.; Koonin, E.V.; Smith, D.R. J. Bacteriol. 183, 4823-4838, 2001
                                                                                                                                                                                                                                                                                                                                      probable membrane protein [imported] - Clostridium acetobutylicum c;Species: Clostridium acetobutylicum C;Date: 14-Sep-2001 #sequence_revision 14-Sep-2001 #text_change 1. C;Accession: A97119
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A;Molecule type: DNA
A;Residues: 1-354 <LYN>
                                                                                                      A; Experimental C; Genetics:
                                                                                                                                                                                                                     A; Title: Genome Sequence and Comparative Analysis of the A; Reference number: A96900; MUID:21359325; PMID:21359325 A; Accession: A97119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C; Accession: A84564 R; Lin, X.; Kaul, S.; M.; Koo, H.; Moffat,
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"----hes 8; Conserv
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C; Superfamily: ery
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                                                                                         A; Gene:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
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A;Accession: A84564
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A; Molecule type: DNA
A; Residues: 1-392 <STO>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              hypothetical protein At2g18410 [imported] - Arabidopsis thaliana C;Species: Arabidopsis thaliana (mouse-ear cress) C;Date: 02-Feb-2001 #sequence_revision 02-Feb-2001 #text_change 02-Feb-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
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Matches 8
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                                                 Query Match
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Similarity 100.0%;
8; Conservative (
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
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                                                                                                                        PID:g15024745; GSPDB:GN00168
ATCC824
                                                 Length 581;
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                       multidrug resistance protein la - mouse (fragment)
N;Alternate names: P-glycoprotein la
C;Species: Mus musculus (house mouse)
C;Date: 31-Dec-1990 #sequence_revision 31-Dec-1990 #text_change 19-Jan
C;Accession: A34175
R;Hsu, S.I.H.; Lothstein, L.; Horwitz, S.B.
J. Biol. Chem. 264, 12053-12062, 1989
A;Title: Differential overexpression of three mdr gene family members
A;Reference number: A34175; MUID:89308614; PMID:2473069
                                                                                                                                                                                                                                                                                                                QУ
                                                                                                                                                                                                                                                                                                                                                                                                                           A;Gene: brg1
C;Superfamily: human SNF2alpha protein; bromodomain homology
F;860-915/Domain: bromodomain homology <BRO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R;Randazzo, F.M.; Khavari, P.; Crabtree, G.; Tamkun, J.; Rossant, J. Dev. Biol. 161, 229-242, 1994
A;Title: brg1: a putative murine homologue of the Drosophila brahma gene, a homeotic A;Reference number: I53078; MUID:94123856; PMID:7904967
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C;Species: Leishmania donovani
C;Date: 31-Dec-1993 #sequence_revision
C;Accession: A42322; S27821; S29187
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C;Date: 02-Aug_1996 #sequence_revision 02-Aug-1996 #text_change 02-Aug-2002
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J. Biol. Chem.
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A; Residues: 1-1022 < RES>
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A; Accession: 153078
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A; Residues: 1-707 <HAN>
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Chem. 267, 2350-2359, 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EVEKTYNV 175
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multidrug resistance protein 1 - Chinese hamster N;Alternate names: P-glycoprotein pgp1 C;Species: Cricetulus griseus (Chinese hamster) C;Species: Cricetulus griseus (Chinese hamster) C;Date: 31-Dec-1990 #sequence_revision 30-Sep-1992 #text_change 19-Jan-2001 C;Accession: A38696; C38696; B38696; A27126; S33768; I52823 R;Devine, S.E.; Hussain, A.; Davide, J.P.; Melera, P.W. J. Biol. Chem. 266, 4545-4555, 1991 J. Biol. Chem. 266, 4545-4555, 1991 A;Title: Full length and alternatively spliced pgp-1 transcripts in multidr A;Reference number: A38696; MUID:91154265; PMID:1671863
R;Teeter, L.D.; Eckersberg, T.; Tsai, Y.; Kuo, M.T.
Cell Growth Differ. 2, 429-437, 1991
A:Title: Analysis of the Chinese hamster P-glycoprotein/multidrug resistance gene pgpl
A;Reference number: 152823; MUID:92088970; PMID:1661134
                                                                                                                                                                                                                                                                    A;Cross references: GB:M17897; NID:g191158; PIDN:AAA37006.1; PID:g191159 R:Zastawny, R.L.; Ling, V.
Biochim. Biophys. Acta 1173, 303-313, 1993
A;Title: Structural and functional analysis of 5' flanking and intron 1: A;Reference number: S33768; MUID:93305724; PMID:8100449
A;Accession: S33768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   R;EndAcott, J.A.; Juranka, P.F.; Sarangi, F.; Gerlach, J.H.; Deuchars, K.L.; Ling, Mol. Cell. Biol. 7, 4075-4081, 1987
A;Title: Simultaneous expression of two P-glycoprotein genes in drug-sensitive Chir A;Reference number; A27126; MUID:88122132; PMID:2893255
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C:Superfamily: multidrug resistance protein; ATP-binding cassette homology C:Keywords: ATP; duplication; glycoprotein; nucleotide binding; P-loop; transmembrane F:234-428/Domain: ATP-binding cassette homology <ABC1>
F:251-258/Region: nucleotide-binding motif A (P-loop) F:375-379/Region: nucleotide-binding motif B F:877-1073/Domain: ATP-binding cassette homology <ABC2>
F:897-1073/Domain: ATP-binding cassette homology <ABC2>
F:897-1073/Domain: ATP-binding cassette homology <ABC2>
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A;Residues: 1-32,771-1276 <DE2>
A;Cross-references: GB:M59252; NID:g191152; PIDN:AAA37003.1; PID:g191153
A;Experimental source: clone ADX124
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A; Residues: 1-21 <ZA
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A; Residues: 706-1276 <END>
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A; Residues: 108-1276 <DE1>
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A; Residues: 1-1276 <DEV>
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A; Residues: 1-1104 <HSU>
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C; Superfamily: multidrug resistance protein; ATP-binding cassette homolog C; Kupwords: alternative splicing; ATP; duplication; glycoprotein; nucleot F; 407-601, Momain: ATP-binding cassette homology <ABC1>F; 424-431/Region: nucleotide-binding motif A (P-loop) F; 548-552/Region: nucleotide-binding motif B F; 1050-1246/Domain: ATP-binding cassette homology <ABC2>F; 1050-1246/Domain: ATP-binding cassette homology <ABC2>F; 1067-1074/Region: nucleotide-binding motif B F; 1193-1197/Region: nucleotide-binding motif B F; 37,91,96/Binding site: carbohydrate (Asn) (covalent) #status predicted F; 430/Binding site: ATP (Lys) #status predicted F; 1073/Binding site: ATP (Lys) #status predicted
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A;Molecule type: mRNA
A;Residues: 1-525,'HV',528-938,'S',940-1035,'V',1037-1276 <HSU>
A;Residues: 1-525,'HV',528-938,'S',940-1035,'V',1037-1276 <HSU>
A;Cross-references: GB:M33581; NID:g199104; PIN:AAA39514.1; PID:g387427
C;Superfamily: multidrug resistance protein; ATP-binding cassette homology
C;KeyWords: ATP; duplication; glycoprotein; membrane protein; nucleotide binding;
F;406-600/Domain: ATP-binding cassette homology <ABCl>
F;423-431/Region: nucleotide-binding motif A (P-loop)
F;547-551/Region: nucleotide-binding motif B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R;Hsu, S.I.H.; Cohen, D.; Kirschner, L.S.; Lothstein, L.; Hartstein, M.; Horwitz, Mol. Cell. Biol. 10, 3596-3606, 1990
A;Title: Structural analysis of the mouse mdrla (P-glycoprotein) promoter reveals A;Reference number: A35671; MUID:90287150; PMID:1972547
A;Accession: A35671
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A; Molecule type: mRNA
A; Residues: 1-1276 <DEV>
A; Residues: 1-1276 <DEV>
A; Cross-references: GB: M30697; NID: g199111; PIDN: AAA39517.1; PID: g387429
A; Cross-references: GB: M30697; NID: g199111; Dthstein, L.; Hartstein, M.;
                                                                                                                                                                F;1066-1074/Region: nucleotide-binding motif A F;1192-1196/Region: nucleotide-binding motif B F;4192-Binding site: ATP (Lys) #Status predicted F;1072/Binding site: ATP (Lys) #status predicted
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R; Devault, A.; Gros, Mol. Cell. Biol. 10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             multidrug resistance protein la - mouse
C;Species: Mus musculus (house mouse)
C;Date: 13-Jul-1990 #sequence_revision 13-Jul-1990 #text_change 02-Feb-2001
C;Accession: A34786; A35671
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"~+~hes 8; Conserv:
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C;Comment: This is an integral membrane protein overproduced in multidrug-resistant tructurally and functionally unrelated lipophilic antitumor drugs.
                                                                                                                                                                                                                                                                                      F;1049-1245/Domain: ATP-binding cassette homology <ABC2>
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Matches 8; Conserv
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420 LTLLLAI 427
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C;Keywords: ATP; duplication; glycoprotein; nucleotide F;1-638,653-1280/Region: duplication F;49-350/Domain: hydrophobic <HBL> F;351-637/Domain: hydrophobic <HBL> F;410-604/Domain: hydrophilic <HBL> F;410-604/Domain: ATP-binding cassette homology <ABC1> F;427-434/Region: nucleotide-binding motif A (P-loop) F;427-437/Region: nucleotide-binding motif B F;638-708/Domain: linker <LIN>
                                                                                                                                                                                                                                             A;Cross-references: GDB:120712; OMIM:171050
A;Map position: 7q21-7q21
C:Superfamily: multidrug resistance protein;
                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: GB:M37725; NID:g183538; PIDN:AAA88048.1; PID:g553315 C;Comment: This is an integral membrane protein overproduced in multidrug-resistant cell tructurally and functionally unrelated lipophilic antitumor drugs.
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R; Gekeler, V.; Weger, S.; Probst, H.
B; Gekeler, V.; Weger, S.; Probst, H.
Biochem. Biophys. Res. Commun. 169, 796-802, 1990
A; Title: mdrl/P-glycoprotein gene segments analyzed
A; Reference number: 152238; MUID:90290529; PMID:1972
A; Accession: 152238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Molecule type: mRNA
A;Residues: 1-184, 'V',186-1280 <CH2>
A;Residues: 1-184, 'V',186-1280 <CH2>
A;Cross-references: GB:M14758; NID:g187468; PIDN:AAA59575.1; PID:g307180
A;Cross-references: GB:M14758; NID:g187468; PIDN:AAA59575.1; PID:g307180
A;Chambers, T.C.; Pohl, J.; Glass, D.B.; Kuo, J.F.
Biochem. J. 299, 309-315, 1994
A;Title: Phosphorylation by protein kinase C and cyclic AMP-dependent protein kinase of A;Reference number: S43838; MUID:94220047; PMID:7909431
A;Accession: S43838
A;Molecule type: protein
A;Molecule type: protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Molecule type: DNA
A;Residues: 1-22 <KIO>
R;Kioka, N.; Yamano, Y.; Komano, T.; Ueda, K.
submitted to the EMBL Data Library, April 1991
A;Description: Transcriptional regulation of multidrug resistance gene (MDR1) expression
A;Reference number: $15500
                                                                                                                                                                                                                                                                                                                                               A; Gene: GDB: PGY1; MDR1
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A;Molecule type: DNA
A;Residues: 800-856 <RE2>
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A; Residues: 1-22, 'R' <KI2>
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A; Accession: S15500
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A; Residues: 1-1280 <CHE>
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Residues: 178-215 <RES>
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C;Accession: $39059
C;Accession: $39059
R;Rhavari, P.A.; Peterson, C.L.; Tamkun, J.W.; Mendel, D.B.; Crabtree, G.R.
Nature 366, 170-174, 1993
A;Title: BRG1 contains a conserved domain of the SWI2/SNF2 family necessary
A;Reference number: $39059; MUID:94050144; PMID:8232556
A;Accession: $39059
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-1613 <KHA>
C;Superfamily: human SNF2alpha protein; bromodomain homology
F;1451-1506/Domain: bromodomain homology <BRO>
                                                                                                                                                      A.Status: preliminary
A.Molecule type: DNA
A.Residues: 1-1726 <DEL>
A.Cross-references: GB:M60807
C.Superfamily: major merozoite surface antigen
C.Keywords: surface antigen
                                                                                                                                                                                                                                                                                 C;Accession: A39401
R;del Portillo, H.A.; Longacre, S.; Khouri, E.; David, P.H. Proc. Natl. Acad. Sci. U.S.A. 88, 4030-4034, 1991
A;Title: Primary structure of the merozoite surface antigen 1 A;Reference number: A39401; MUID:91219506; PMID:2023952
A;Accession: A39401
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C; Species: Homo sapiens (man)
C; Date: 25-Feb-1994 #sequence
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F;994-1280/Domain: hydrophilic <HB2>
F;1053-1249/Domain: ATP-binding cassette homology <ABC2>
F;1070-1077/Region: nucleotide-binding motif A (P-loop)
F;1196-1200/Region: nucleotide-binding motif B
                                                                                                                                                                                                                                                                                                                                                                                                     C;Species: Plasmodium vivax
C;Date: 28-Feb-1992 #sequence_revision 28-Feb-1992 #text_change
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A;Experimental source: skin
C;Comment: This peptide has antimicrobial activity.
C;Comment: This peptide has antimicrobial activity.
C;Comment: This peptide has antimicrobial precursor amino-terminal C;Keywords: antibacterial; antibiotic; antifungal; disulfide bond; skin
F;1-41/Domain: dermorphin precursor amino-terminal homology <DER>
F;1-22/Domain: signal sequence #status predicted <SIG>
F;23-41/Domain: propeptide #status predicted <PRO>
F;44-65/Product: antimicrobial peptide gaegurin 5 #status experimental <
F;59-65/Region: rana box motif
                                                                                                                                               RESULT
A53744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A:Experimental source: skin R:Park, J.M.; Jung, J.E.; Lee, B.J. Biochem. Biophys. Res. Commun. 205, 948-954, 1994 A:Title: Antimicrobial peptides from the skin of a Korean A:Reference number: PC2300; MUID:95091844; PMID:7999137
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R:Park, J.M.; Lee, J.Y.; Moon, H.M.; Lee, B.J.
Biochim. Biophys. Acta 1264, 23-25, 1995
A:Title: Molecular cloning of cDNAs encoding precursors
A:Reference number: S59961; MUID:96038814; PMID:7578251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               n; Desgouits, F.; Cohen, D.; Nairn, A.C.; Greengard, P.; Girault, J.A.
J. Biol. Chem. 270, 8772-8778, 1995
A;Title: Phosphorylation of DARPP-32, a dopamine- and cAMP-regulated phosphoprotein, A; Reference number: A56388; MUID:95238371; PMID:7721783
A; Accession: A56388
ranalexin precursor - bullfrog
c;Specles: Rana catesbeiana (bt
C;Date: 10-Sep-199 #sequence_
C;Accession: A53744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                antimicrobial peptide gaegurin 5 precursor - Korean C:Species: Rana rugosa (Korean frog) C:Date: 19-Mar-1997 #sequence_revision 19-Mar-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 34
A56388
A56388
construction of the properties of the prop
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A; Residues: 1-49 <DES>
C; Keywords: phosphoprotein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: mRNA
A; Residues: 1-65 < PAR>
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A; Residues: 1-72 <HOP>
A; Residues: 1-72 <HOP>
C; Comment: This protein is a nonenzymatic component of ATPase.
C; Superfamily: H+-transporting ATP synthase lipid-binding protein
C; Keywords: ATP biosynthesis; hydrolase; membrane-associated complex; transmembrane
F;1-72/Product: H+-transporting ATP synthase lipid-binding protein #status experimen
F;2-28/Domain: transmembrane #status predicted <TM1>
F;2-28/Domain: transmembrane #status predicted <TM2>
                         RESULT
C71978
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A;Title: Ranalexin. A novel antimicrobial peptide from bullfrog A;Reference number: A53744; MUID:94193792; PMID:8144672
A;Accession: A53744
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A;Title: Sequence and over-expression of subunits of adenosine triphosphate synthase A;Reference number: S01397; MUID:88163679; PMID:2894854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               H+-transporting two-sector ATPase (EC 3.6.3.14) lipid-binding protein - the N;Alternate names: H+-transporting ATP synthase chain c; hydrogen ion-trans C;Species: thermophilic bacterium PS-3 C;Date: 31-Jul-1979 #sequence_revision 23-Oct-1981 #text_change 14-Dec-2001
                                                                                                                                                                                                                                                                                                               F;46-72/Domain: transmembrane *status predicted <TM2> F;1/Modified site: N-formylmethionine *status experimental
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A; Residues: 1-66 <CLA>
hypothetical protein jhp0055 - Helicobacter
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A; Residues: 1-72 <OHT>
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6/Active site: Glu
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C:Species: Helicobacter pylori A;Variety: strain J99 C:Date: 12-Feb-1999 #sequence\_revision

C; Accession: C71978 R; Alm, R.A.; Ling, 1

L.S.L.;

Moir,

D.T.;

King,

B.L.;

Brown, E.D.;

Doig, P.C.;

12-Feb-1999 #text\_change 08-Oct-1999

Vovis,

G.F.;

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A;Gene: ygdF
C;Superfamily:
F;1-64/Domain:
                                                                                                                                                                                                                                                                                                          RESULT 40
C71549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A. Accession: C71978
                                                             A; Experimental C; Genetics: A; Gene: CT164
                                                                                                                                                                  A;Title: Genome sequence of A;Reference number: A71570; A;Accession: C71549
                                                                                                                                                                                                                                             C;Species: Chlamydia trachomatis
C;Date: 13-Sep-1998 #sequence_revision 13-Sep-1998 #text_change 08-Oct-1999
C;Accession: C71549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Status: preliminary
A; Molecule type: DNA
A; Residues: 1-78 <ARN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; Ives, C.; Gibson, R.; Merberg, D.; Mills, S.D.; Jiang, Q.; Taylor, D.E.; Nature 397, 176-180, 1999
A;Title: Genomic sequence comparison of two unrelated isolates of the human
                                                                                        A;Cross-references: GB:AE001290; GB:AE001273; NID:g3328560; PIDN:AAC67755.1; PID:g332856
A;Experimental source: serotype D, strain UW-3/Cx
                                                                                                                    A; Molecule type: DNA
A; Residues: 1-86 <ARN>
                                                                                                                                                    A; Status: preliminary
                                                                                                                                                                                                                R;Stephens, R.S.; Kalman, (
Science 282, 754-759, 1998
                                                                                                                                                                                                                                                                           hypothetical protein CT164 - Chlamydia trachomatis (serotype D, C;Species: Chlamydia trachomatis
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A; Residues: 1-85 <GAN>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R;Gan, K.; Gupta, S.D.; Sankaran, K.;
J. Biol. Chem. 268, 16544-16550, 1993
J. Hitle: Isolation and characterization
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A;Experimental source: strain J99
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Best Local
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Matches 7; Conserv
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                  Best
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                  Local
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nes 7; Conserv
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                                                                                                                                                                                                                             Kalman, S.; Lammel, C.J.; Fan, J.; Marathe, R.; Aravind, L.; Mitchell
                                                                                                                                                                                                                                                                                                                                                                        21
                 1.5%;
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0; MUID:99120557; F
                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                1.5%;
                                                                                                                                                                                  an obligate intracellular pathogen of humans: Chlamydia traw MUID:99000809; p_{\rm MID}:9784136
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Pred. No
                 Pred.
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Pred. No.
   Mismatches
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45;
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41;
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PMID:9923682
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 0;
                            Length 86;
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hypothetical protein APE1888 -
C; Species: Aeropyrum pernix
C; Date: 20-Aug-1999 #sequence_1
                                            RESULT 43
H72575
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AF0856
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A;Molecule type: DNA
A;Residues: 1-104 <STO>
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C;Superfamily: hypothetical protein HI0673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nature 413, 848-852, 2001
A; Authors: Parry, C.; Quail, M.; Rutherford, K.; A; Title: Complete genome sequence of a multiple
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A; Residues: 1-103 <P
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Best Local Similarity
Matches 7; Conser
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Best Local Similarity
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                                                                                                                         360 AVQELSS
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on, P.; Cronin,
                                                                                                                                                                  Conservative
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                                                                                                        37
                                                                                                                                   366
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m pernix
#sequence_revision
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lin, A.;
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                            Aeropyrum pernix (strain
                                                                                                                                                                 0;
                                                                                                                                                                 Score 7; DB 2; Pred. No. 53; 0; Mismatches
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Pred. No.
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Davis,
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20-Aug-1999 #text_change 20-Aug-1999
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53;
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C;Species: Pseudomonas aeruginosa
C;Species: Pseudomonas aeruginosa
C;Accession: C83236
R;Stover, C.K.; Pham, X.Q.; Erwin, A.L.; Mizoguchi, S.D.; Warrener, P.; Hich adman, S.; Yuan, Y.; Brody, L.L.; Coulter, S.N.; Folger, K.R.; Kas, A.; Lart pry, S.; Olson, M.V.
Nature 406, 959-964, 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  conserved hypothetical protein STY3056 [imported] - Salmonella enterica subsp. C;Species: Salmonella enterica subsp. enterica serovar Typhi A;Note: this species has also been called Salmonella typhi C;Date: 09-Nov-2001 #sequence_revision 09-Nov-2001 #text_change 27-Nov-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           hypothetical protein PA3284 [imported] – Pseudomonas aeruginosa (strain PAO1)
C;species: Pseudomonas aeruginosa
                                                                                                                                                      Cross-references: GB:AE004750; GB:AE004091; NID:g9949400; PIDN:AAG06672.1; GSPDB:GN:Experimental source: strain PAO1
                                                                                                                                                                                                                                                                                                             enome sequence of Pseudomonas aeruginosa PA01, A82950; MUID:20437337; PMID:10984043
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drug resistant
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0;
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A.; Larbig,
Gaps
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R; Kawarabayasi, Y.; Hino, Y.; nutanana, T.; Tanaka, I., marawa, H.; Takamiya, M.; Masuda, S.; Funahashi, T.; Tanaka, I., marawa, H.; Takamiya, M.; Masuda, S.; Funahashi, T.; Tanaka, I., marawa, H.; Takamiya, M.; 1999

A; Title: Complete genome sequence of an aerobic hyper-thermophilic A; Title: Complete genome sequence of an aerobic hyper-thermophilic A; Title: Complete genome sequence of an aerobic hyper-thermophilic A; Title: Complete genome sequence of an aerobic hyper-thermophilic A; Title: Complete genome sequence of an aerobic hyper-thermophilic A; Title: Complete genome sequence of an aerobic hyper-thermophilic A; Title: Tanaka, II., marawa, II., marawa, II., marawa, II., marawa, II., marawa, III., marawa, II., mara
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 45
B72763
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A:Title: Complete genome sequence of an aerobic hyper-thermophilic A:Reference number: A72450; MUID:99310339; PMID:10382966
A:Accession: H72575
                                                                                                                                                                                                                                                                                                                                                                     hypothetical protein APE0095 - Aeropyrum pernix (strain K1)
C;Species: Aeropyrum pernix
C;Date: 20-Aug-1999 #sequence_revision 20-Aug-1999 #text_change 09-Jun-2000
C;Accession: B72763
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C;Species: Aeropyrum pernix
C;Date: 20-Aug-1999 #sequence_revision 20-Aug-1999 #text_change 09-Jun-2000
                                                        A; Experimental source:
                                                                                   A; Cross-references: DDBJ: AP000058;
                                                                                                                 A; Molecule type: DNA A; Residues: 1-109 <KAW>
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R; Kawarabayasi, Y.;
                                   Genetics:
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Res. 6, 83-101, 1999
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7; Conserv
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, S.; Funahashi, T.; Tanaka,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Horikawa, H.; Yamazaki, S.; Haikawa, Y.; S.; Funahashi, T.; Tanaka, T.; Kudoh, Y
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Pred. No.
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Pred. No.
                                                                                   NID: g5103388; PIDN: BAA79004.1;
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T.; Kudoh, Y.;
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                                                                                   PID:d1042780;
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                                                                             A;Molecule type: protein
A;Residues: 2-17,'B',19-24,'B',26-28,'B',30-38,'B',40-43,'Z',45-48,'B',50-51,'B'
C;Genetics:
                                                                                                                                                             A;Cross-references: EMBL:Z73233; NID:g1360407; PIDN:CAA97592 A;Experimental source: strain S288C R;Otaka, E.; Higo, K.; Osawa, S. Biochemistry 21, 4545-4550, 1982 A;Title: Isolation of seventeen proteins and amino-terminal A;Reference number: S11575; MUID:83048950; PMID:6814480 A;Accession: S11582
                                                                                                                                                                                                                                                                                                                                                            A;Cross-references: EMBL:X94607; NID:g1181264; PIDN:CAA64308.1; R;Andre, B.; Urrestarazu, L.A. submitted to the Protein Sequence Database, May 1996 A;Reference number: S64872 A;Accession: S64889 A;Molecule type: DNA A;Residues: 1-121 <AND>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: DNA
A; Residues: 1-121 <URR>
                                                     A; Gene:
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Cross-references:
Map position: 12R
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S61618

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December 1995

PIDN:CAA97592.1;

PID:g1370303; MIPS:YL

PID:g1181282

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SGD:RPL22A

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submitted to the EMBL Data Library, November 1991 A;Description: The C. elegans sequencing project: A;Reference.number: S31122 A;Status: project: project: A;Status: project: proj
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S61635
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Introns: 21/2
C; Superfamily:
C;Date: 09-Mar-1996 #sequence_revision 12-Apr-1996 C;Accession: S61635; S64889; S11582
                                                                                                 ribosomal protein L22.e.A, cytosolic - N;Alternate names: protein L2168; prot
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A; Residues: 1-117 <SUL>
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                                     #text_change 19-Apr-2002
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C; Accession: AE2704
R; Wood, D.W.; Setubal, J.C.; Kaul, R.; Monks, D.; Chen, L.; Wood, G.E.; Chen, Y.; erage, G.; Gillet, W.; Grant, C.; Guenthner, D.; Kutyavin, T.; Levy, R.; Li, M.; Karp, P.; Romero, P.; Zhang, S. Science 294, 2317-2323, 2001
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A;Note: YLR061w
C;Superfamily: rat ribosomal protein L22
C;Keywords: cytosol; protein biosynthesis; ribosome
                                                                                                               A; Map position: circular
                                                                                                                                                                                                          A Residues: 1-125 <KUR>
                                                                                                                                                                                                                                                                                A;Title: The Genome of the Natural Genetic Engineer Agrobacterium tumefaciens C58 A;Reference number: AB2577; PMID:11743193
                                                                                                                                                                                                                                                                                                                                                                                                                                                  two component response regulator Atu1038 [imported] - Agrobacterium tumefaciens C:Species: Agrobacterium tumefaciens C:Date: 11-Jan-2002 #sequence_revision 11-Jan-2002 #text_change 11-Jan-2002
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A;Reference number: A97359; PMID:11743194
A;Accession: E97486
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A.; Liu, F.; Wollam, C.; Allinger, M.; Doughty, D.; Scott, C.; Lappas, C.; Markelz,
Science 294, 2323-2328, 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   hypothetical protein AGR_C_1913 [imported] - Agrobacterium tumefaciens (strain C58, C;Species: Agrobacterium tumefaciens C:Date: 30-Sep-2001 #sequence_revision 30-Sep-2001 #text_change 11-Jan-2002 C;Accession: E97486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
E97486
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                                                                                                                                                                     A; Experimental source: strain
                                                                                                                                                                                                                                                                                                                         ster, E.W.
                                                                                                                                                                                                                                                                                                                                           A; Authors: Yoo, H.;
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A; Residues: 1-125 < KUR>
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                                                                                                                                    Gene: Atul038
                                                                                                                                                                     :Cross-references: GB:AE008688; PIDN:AAL42051.1; PID:g17739429; GSPDB:GN00186
¡Experimental source: strain C58 (Dupont)
                                                                                                                                                                                                                                               Status: preliminary
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Best Local
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                                                                                                                 chromosome
                                                        100.0%;
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R.Nierman, W.C.; Feldblyum, T.V.; Paulsen, I.T.; Nelson, K.E.; Eisen, J.; Heidelberg, B.; Laub, M.T.; DeBoy, R.T.; Dodson, R.J.; Durkin, A.S.; Gwinn, M.L.; Haft, D.H.; Kon, J.; Ermolaeva, White, O.; Salzberg, S.L.; Shapiro, L.; Venter, J.C.; Fraser, C Proc. Natl. Acad. Sci. U.S.A. 98, 4136-4141, 2001
A;Title: Complete Genome Sequence of Caulobacter crescentus.
A;Reference number: A87249; MUID:21173698; PMID:11259647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
D87491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                hypothetical protein CC1953 [imported] - Caulobacter crescentus C;Species: Caulobacter crescentus C;Date: 20-Apr-2001 #sequence_revision 20-Apr-2001 #text_change 20-Apr-2001
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                                                                                                                                                                                           C; Genetics:
                                                                                                                                                                                                               A;Cross-references: GB:AE005673; NID:g13423412; PIDN:AAK23928.1; GSPDB:GN00148
                                                                                                                                                                                                                                      A; Molecule type: DNA
A; Residues: 1-131 <S
                                                                                                                                                                                                                                                                                A;Status: preliminary
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                                                                                                       Query Match
Best Local 9
                       137 AIMISVI 143
52 AIMISVI 58
                                                                                   Local Similarity es 7; Conser
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                                                                                Conservative 0;
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                                                                                   0,
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